

A Two-Tiered Theory of Generics:  
A Synthesis of Leslie's and Liebesman's  
Theories

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## Introduction

Generics are sentences that are not explicitly quantified but still seems to express something general of their subjects. For instance, “Dogs bark” is a true generic and so is “Ducks lay eggs”. What sets generics apart from quantified sentences is that their truth conditions are very difficult to pin down. Although most dogs bark it is not the case that most ducks lay eggs because only fertile female ducks do. In spite of this “Ducks lay eggs” seems to be true.

There are many reason to study generics. First, it is challenging. As mentioned, the truth conditions of generics are difficult to explain. They have been described as “notoriously erratic” (Greg N. Carlson 1977, p. 440). David Liebesman describes the theoretical situation in the following way:

Surveying the literature on generics reveals a large supply of complicated and interesting examples, and, to go with the examples, a large supply of complicated and interesting semantic accounts of Gen [the generic operator]. With the exception of Leslie’s (2007 and 2008) recent proposal, there are extant counterexamples to every analysis. One has the feeling that Leslie’s theory has only been spared because of its recency. (Liebesman 2011, p. 411)

Second, generics are frequent, especially in everyday language, and they express interesting propositions. For instance generics express general knowledge, e.g. “I know that dogs bark”; *ceteris paribus* laws of special sciences (non-universal generalizations), e.g. “Agents strive for rationality” and moral generalizations, e.g. “Promises ought to be kept” (Liebesman 2011, p. 409).

Third, generics are cognitively significant by enabling agents with incomplete information to jump to reasonable conclusions (Asher and Morreau 1995, p. 305). For instance, if I know that “Birds fly” and I see a bird, then it is reasonable for me to jump to the conclusion that it flies. But the bird might be a penguin, injured or too young to fly, so the inference is not valid. Still, this is a reasonable conclusion for me to draw.

Fourth, children learn and understand generics before explicitly quantified expressions (such as “All dogs bark”) and this is strange because our theoretical grip on the truth conditions of universally quantified sentences is much better than that on the truth conditions for generics (Leslie 2008, p. 2).

There are many different theories of generics. Two recent and promising theories that have not yet received much attention are those of Sarah-Jane Leslie and David Liebesman.<sup>1</sup> In this paper I will suggest a framework for

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<sup>1</sup>For other theories of generics see, for instance, Geurts (1985), Krifka (1987), Schubert

how to think about theories of generics in which I will synthesize Leslie's and Liebesman's theories by arguing that they are at different levels of description. I will also suggest some modifications to improve Leslie's theory.

This paper proceeds as follows: section 1 describes what is now more or less common knowledge about generics, section 2 presents Leslie's and Liebesman's theories, section 3 presents their theories with a number of arguments and section 4 suggests a framework for theories of generics in which Leslie's and Liebesman's theories are synthesized.

## 1 Generics

The following are examples of true generics:<sup>2</sup>

- (1) The cat meows.
- (2) Ducks lay eggs.
- (3) Plants are green.
- (4) The dodo is extinct.
- (5) A fireman fights fires.
- (6) Scissors are for cutting.
- (7) Gold is valuable.

Sentences like these have a number of characteristic features that sets them apart from other sentences.

First, there is no explicit generic operator; no known language has a dedicated sign to mark a sentence as generic (Dahl 1995, p. 425). Consider (1). It can both be interpreted as an existential sentence, i.e. referring to a particular object, and a generic. There is nothing in it that shows which interpretation is the right one. Which is the right interpretation depends on the context. It can be understood as an existential sentence, i.e. referring to a particular cat, if the context's focus is some particular cat, e.g. a cat in the vicinity. But it can also be understood as a generic if the context's focus is the kind cat or cats in general, e.g. in learning a child the cry of cats.

Second, generics are not explicitly quantified. Compare (2) to

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and Pelletier (1987), Asher and Morreau (1995), Gregory N. Carlson (1995), Chierchia (1995), Greg N. Carlson (1999), Koslicki (1999) and G. Carlson (2008).

<sup>2</sup>'Generics' is actually an ambiguous term; it can mean generic *sentences* but also the *propositions* expressed by those sentences. It will be clear from the context which meaning I intend.

(8) All ducks lay eggs.

(2) and (8) does not have the same meaning. (2) is not explicitly quantified because it does not explicitly state how many ducks that lay eggs. (8) is explicitly quantified because it explicitly states how many ducks that lay eggs, namely all.

Third, generics are often taken to express something about kinds even if there seems to be no consensus of what kinds are. Kinds are distinct from objects. Object are particular things, e.g. a particular dog is an object and a particular car is an object. Pre-theoretically everyone seems to know what kinds are. For instance, kinds unlike objects have members, e.g. Fido belongs to the kind dog, and some kinds have a place in taxonomic hierarchies, e.g. a dog is a kind of an animal and car is a kind of a vehicle. Another thing about kinds are, as is noted by Krifka (1995, p. 399), that they seem prior to objects in that, e.g. the kind dog is necessary to relate to, or speak about, an object as a dog. The inverse does not hold, a particular dog is not necessary to relate to, or speak about, the kind dog.

Fourth, generics express propositions that do *not* refer to *particular* objects. To see this consider the following sentences which can be understood as generics:

(9) Lawyers wear suits.

(10) The dodo is extinct.

(11) A dog barks.

(9) cannot be understood as expressing something about particular lawyers. It can only be understood as expressing something about lawyers in general or about the kind lawyer. (10) cannot be understood as expressing something about particular dodos. It can only be understood as expressing something about the kind dodo since particular objects cannot be extinct. (11) can both be understood as an existential sentence and a generic, i.e. as expressing something about a particular dog, e.g. Fido barks, and as expressing something general about dogs, e.g. in general dogs bark, or something about the kind dog, e.g. the kind dog barks. So, generics can be understood as expressing propositions about general properties or propositions about kinds.

Fifth, generics can be divided into *I-* and *D-generics*. This was first made by Krifka (1987).<sup>3</sup> Examples of I-generics are:

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<sup>3</sup>In the literature one finds similar distinctions that does not seem to be relevantly different. Krifka et al. (1995, pp. 2-3) and Liebesman (2011, p. 412) calls I-generics characterizing sentences/predications/generics and D-generics kind(-level) predications.

(12) Dogs bark.

(13) A tiger is striped.

(14) Cars have radios.

I-generics are such that it is possible for an object to satisfy the predicated property, e.g. it is possible that a particular dog barks (Asher and Morreau 1995, p. 301). Examples of D-generics are:

(15) The dodo is extinct.

(16) The domestic cat is common.

(17) Pandas are endangered.

D-generics are such that it is not possible for an object to satisfy the predicated property, e.g. it is a category mistake to claim that a particular cat is extinct, common or endangered (Asher and Morreau 1995, pp. 300–301; Greg N. Carlson 1977, p. 444).

One of the most interesting features of generics, which was touched upon in the introduction, is that I-generics have varying amounts of exceptions. The exceptions vary from one extreme to the other. The variation of exceptions is illustrated by fig. 1. One extreme is generics with barely no exceptions, illustrated by fig. 1a. The other extreme is generics that have nothing but exceptions, illustrated by fig. 1e. The degrees between the extremes are illustrated by figs. 1b to 1d. Each rectangle of fig. 1 illustrates the relevant partition of the world. The circles in each rectangle are Venn diagrams that illustrate the relation of the extensions of the subject,  $S$ , and the predicate,  $P$ , of a generic, i.e. how many objects relating to the subject term that satisfies the predicated property. For example, in fig. 1a the extension of tigers, i.e. all objects satisfying the property of being a tiger, almost overlaps with the extension of striped objects, i.e. all objects satisfying the property of being striped. Here follows a description of the illustrated generics in fig. 1:

- “Tigers are striped” (fig. 1a) barely have any exceptions (only albino tigers lack stripes) which makes it similar to sentences of the forms “Almost all  $S$  are  $P$ ” and “Most  $S$  are  $P$ ”.
- “Ducks lay eggs” (fig. 1b) is true even if only around half of all ducks lay eggs (only fertile female ducks lay eggs).
- “Bees reproduce” (fig. 1c) is true even if only around 10% of all bees reproduce (only queens and drones reproduce, the majority of bees are sterile).

- “Mosquitoes carry the West Nile virus” (fig. 1d) is true if even if only around 1% of all mosquitoes carry the virus (less than 1% actually carry the virus).
- “OrangeCrusher 2000s crush oranges” (fig. 1e) can be true even if no OrangeCrusher 2000s has ever been used, i.e. no such machine has ever crushed oranges, perhaps due to lack of oranges.

A great difficulty in accounting for the truth conditions of generics, such as these, is to explain why the amount of exceptions varies.

Something that further complicates the issue that the amount of exceptions varies is that there are I-generics that are false even though a significant amount of objects satisfies the predicated property. Figure 2 illustrates this. As mentioned, “Ducks lay eggs” (fig. 1b) is true even though only around half of the ducks lay eggs. Still “Ducks are female” (fig. 2a) is false even though there are more female ducks than egg-laying ducks, i.e. fertile female ducks. As mentioned, “Mosquitoes carry the West Nile virus” (fig. 1d) is true even though less than 1% actually carry the virus. Still “Books are paperback” (fig. 2b) is false even though comparatively few books are paperbacks.<sup>4</sup>

When it comes to exceptions, D-generics could not be more different from I-generics. D-generics neither have nor are sensitive to exceptions. Exceptions are objects referred to by the subject of a sentence that do not satisfy the predicated property, e.g. black swans are exceptions to “Swans are white” because black swans do not satisfy the property of being white. There are no exceptions to “The dodo is extinct” because there cannot be particular dodos that are exceptions, i.e. there cannot be particular dodos that are non-extinct. Rather the predicated property of D-generics is predicated directly of the kind of which there is only one. Of course, the dodo could be non-extinct but that would not be because a particular dodo had the property of being non-extinct.

Sixth, generics can take many syntactic forms. Table 1 lists some sentences that can be understood as generics. The underlined terms is the subject terms and the syntactic form for each subject term is found in the right column. The syntactic form of the subject term is not important for this paper because the discussion is about generics in general and not about generics of a particular form. Thus, for simplicity, I will mainly discuss bare plurals but assume that what is said generalize to generics of other syntactic forms.

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<sup>4</sup>The examples showing the variation of exceptions for generics are all Leslie’s. Even if my intuitions of their truth and falsity are not as clear as hers seems to be, I, for the sake of argument, agree with her intuitions. It is important to note that the intuitions of main interest are ordinary intuitions and not the intuitions of experts or logicians.

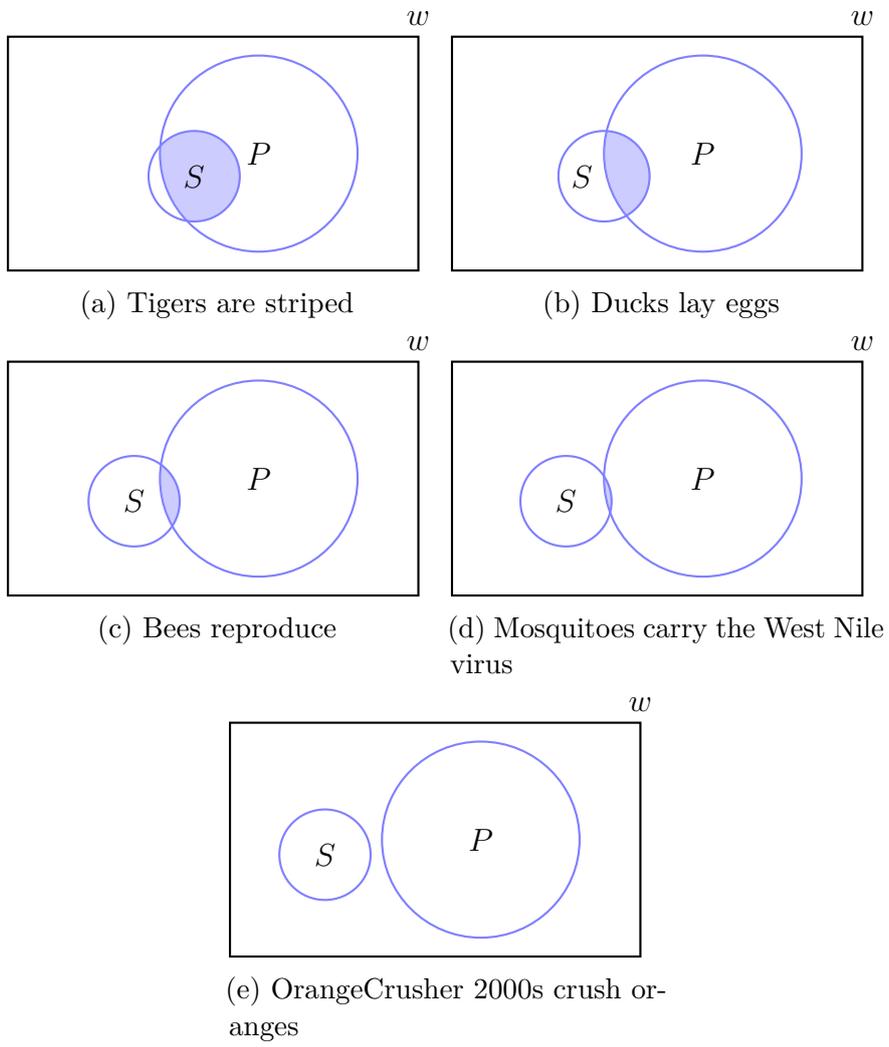


Figure 1: Extensions of some true generics

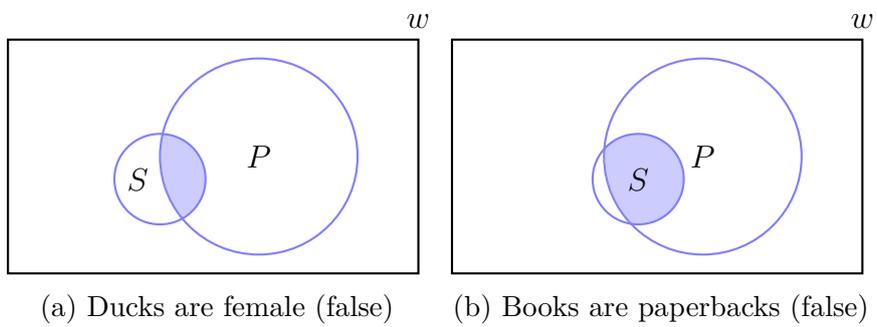


Figure 2: Extensions of some false generics

Table 1: Sentences that can be understood as generics and the syntactic form of their subject

<u>Cars</u> have radios.	bare plural
<u>A tiger</u> is striped.	indefinite singular
<u>The dodo</u> is extinct.	definite singular
<u>Wood</u> is used for construction.	mass noun

Seventh, generics are very similar to *habituals*. Consider the following sentences:

- (18) John smokes.
- (19) Ann eats oatmeal for breakfast.
- (20) Lisa drinks coffee.

These can be understood as expressing that the subject generally satisfies the predicate rather than satisfying it in a *particular* situation. Note that they all contain an episodic verb, i.e. a verb describing an activity, which is something that holds for all habituals (Krifka et al. 1995, p. 17). I take habituals to express propositions about persons' habits, tendencies, dispositions, etc. and to be similar to generics except that they do not refer to kinds.<sup>5</sup> To outline features of both generics and habituals I will present some of their shared features.

Habituals and generics have a similar relation to explicitly quantified expressions (Krifka 1987, p. 9). Neither generics nor habituals are explicitly quantified. To see this consider the following sentences of which the first can be understood as a generic and the second as a habitual:

- (21) Plants are green.
- (22) Sheila runs in the morning.

(21) does not say how many plants that are green and (22) does not say how often Sheila runs in the morning. But neither has a great amount of exceptions and can therefore be understood as being implicitly quantified such

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<sup>5</sup>Most theorists either treat habituals and generics uniformly or habituals as a subset of generics (Dahl 1975; Krifka 1987, p. 9; Chierchia 1995, p. 196; Krifka et al. 1995, pp. 2–3, 17; G. Carlson 2008, p. 20; Liebesman 2011, pp. 438–439, note 27). Apart from this there seems to be no consensus of what habituals are. My way of understanding them is close to Chierchia (1995, p. 196) and Liebesman (2011, pp. 438–439, note 27).

that they allow for rephrasing (without change of meaning) by incorporating a quantifier such as the following:

(23) Plants are generally/often/usually green.

(24) Sheila generally/often/usually runs in the morning.

Habituals are similar to generics in that both habituals and I-generics have varying amounts of exceptions. As mentioned above, I-generics have varying amounts of exceptions. To see that the same goes for habituals consider the following sentences:

(25) Lisa kills people.

(26) John smokes.

If both are understood as habituals they have different amounts of exceptions. For (25) to be true it may be enough that Lisa have killed two people but for (26) to be true he may have to smoked *far more* than two times.

Another similarity of habituals and I-generics is that their negations are strong, i.e. they have fewer exceptions than their positive counterparts (G. Carlson 2008, pp. 20–21). Consider the following sentences, which are illustrated by fig. 3, of which the second is a negation of the first:

(27) Plants are green.

(28) Plants are not green.

Both can be understood as generics. (27) have some exceptions. It is true even though some plants are not green. (28) barely have any exceptions. One green plant seems to be enough to defeat it. To see that this also goes for habituals consider following sentences of which the second is a negation of the first:

(29) John smokes.

(30) John does not smoke.

Both can be understood as habituals. (29) has exceptions. It can be true even though for a distinct amount of time John is not smoking. (30) has fewer exceptions. It is enough that John smokes once a year to falsify (30) but the fact that John does *not* smoke once a year is not enough to falsify (29).

The final similarity of habituals and generics that I wish to point out is modal, their truth depends on not only the actual world but also on possible worlds. This can be noted by the possibility of making predictions of future and possible situations from generics and habituals (Dahl 1975, p. 101; G. Carlson 2008, p. 19). Consider the following sentences:

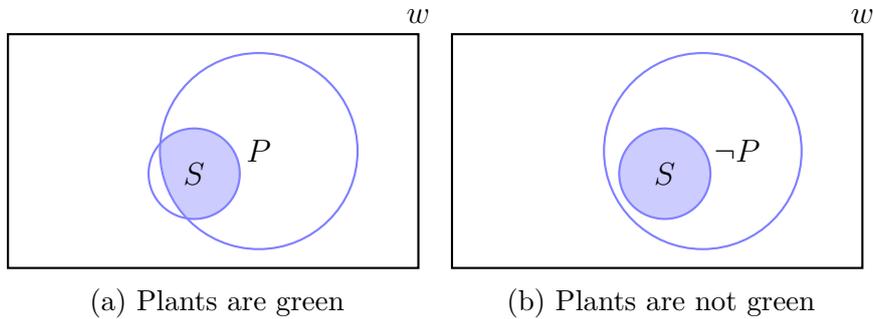


Figure 3: Comparison of the extensions of a generic and its negation

(31) Tigers roar.

(32) Simon picks his nose.

Given that (31) is a true generic and that (32) is a true habitual it is reasonable to predict that future tigers will roar and that Simon will pick his nose in the future. The same goes for possible situations, i.e. how things could have been or, more formally, state of affairs that could have obtained but does not. Given that (31) is a true generic and that (32) is a true habitual it is reasonable to predict things like “Tigers would have roared even if the Soviet Union was first to put a man on the moon” and “Simon would have picked his nose even if his sister preferred tea to coffee”. The modal character of (31) and (32) can also be noted by considering whether they would be doubted if it is believed that what they express is false in the future or in possible situations. If it is believed that future tigers do not roar, then it will be doubted that (31) is true. If it is believed that tigers in possible situations, e.g. tigers in a world where Korea was never divided, do not roar, then it will be doubted that (31) is true. If it is believed that Simon will not pick his nose in the future, then it will be doubted that (32) is true (even if Simon has picked his nose regularly up until now). If it is believed that Simon does not pick his nose in possible situations, e.g. in a world where Simon’s kitchen is blue rather than green, then it will be doubted that (32) is true.

These seven features jointly constrain what an adequate theory of generics can be like. As suggested it is not easy to come up with a theory that accounts for all of them.

## 2 Theories

### 2.1 Leslie

Leslie’s (2007, 2008) theory is both about the semantics of generics, such as their logical form and their truth conditions, and the cognition of generics, such as how they are learned. I will focus on the former part of her theory.<sup>6</sup>

Leslie takes I- and D-generics to have different logical forms. She takes the logical form of I-generics to be a tripartite structure, i.e. being composed of three parts, like the following:

$$\text{Gen } x [\text{Restrictor}(x)] [\text{Scope}(x)]$$

In this structure Restrictor is taken to specify the domain, Scope is taken to specify the property that is attributed to the members of the domain and Gen binds free variables in Restrictor. Gen is taken to function similar to adverbs of quantification, i.e. words like usually, generally, typically, always, sometimes, etc. (Leslie 2008, pp. 4–6).<sup>7</sup> The logical form can be understood as generic quantification. If “Dogs bark” is interpreted as having such a structure it can be represented logically as  $\text{Gen } x [\text{Dogs}(x)] [\text{Bark}(x)]$  which can be understood as “Generally, for every object that is a dog it is such that it barks”.

For D-generics Leslie (2008, pp. 5–6, footnote 3) takes them to be a bipartite structure, i.e. being composed of two parts, like the following:

$$\text{Predicate}(\text{kind})$$

This means that the logical form of D-generics is taken to be a one-place predicate taking a kind as an argument. If “The dodo is extinct” is interpreted as having such a structure it can be represented logically as  $\text{Extinct}(\text{dodo})$ . In

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<sup>6</sup>The philosophical part of Leslie’s theory is also discussed in Leslie (2012), Cheng (2011) and Haslanger (2011). Leslie (2012) is only relevant for this paper in one sense which is something I will discuss in section 4.2. Cheng (2011, pp. 11–12) and Haslanger (2011, pp. 185–186) are not relevant for this paper because they merely use Leslie’s theory as motivation against a quantificational view of generics. In addition several sources quote Leslie without discussing her theory in detail, see e.g. Prasada (2009) and Smith (2010). Finally, the cognitive part of Leslie’s theory is not relevant for this paper but it has been extensively discussed, see e.g. Khemlani, Leslie, Glucksberg, and Fernandez (2007); Khemlani, Leslie, and Glucksberg (2008, 2009, 2011); Cimpian, Brandone, and Gelman (2010); Leslie, Khemlani, and Glucksberg (2011); Herbelot (2011); Brandone et al. (2012); Leslie and Gelman (2012); Sorensen (2012).

<sup>7</sup>See Lewis (1975) for an account of adverbs of quantification as binding any (or rather most) free variables in sentences and quantifying over cases.

having this view on the logical form of I- and D-generics Leslie joins the consensus among theorists (Leslie 2008, p. 6; Liebesman 2011, p. 410).

Leslie makes three important assumptions for her truth conditions. The first assumption is that general sentences lacking explicit quantification have logical forms containing the operator Gen (Leslie 2008, p. 5). The second assumption is that “the generalizations that generic sentences express correspond to the cognitive system’s most primitive, default generalizations.” (Leslie 2007, p. 381). For instance this means that since “Dogs bark” contains no explicit quantifier, such as ‘All’, the operator Gen occurs in its logical form and its meaning is comprehended via some cognitively primitive mechanism. Leslie purports to explain that children learn and understand generics before explicitly quantified expressions by there being such a cognitive mechanism. The third assumption is that generics can be divided into three categories (Leslie 2008, p. 39):<sup>8</sup>

**Characteristic generics** Generics predicating characteristic properties. They can have some exceptions. Example: “Ducks lay eggs”.

**Striking generics** Generics predicating striking properties. They might have many exceptions. Example: “Mosquitoes carry the West Nile virus”.

**Majority generics** All other generics. They can only have few exceptions. Example: “Cars have radios”.

To understand Leslie’s truth conditions one needs to understand the particular notions in them. The distinction between *positive* and *negative counterinstances* is psychological. Negative counterinstances are objects referred to by the subject that simply fail to satisfy the predicated property, e.g. dogs that do not bark are negative counterinstances to “Dogs bark”. Positive counterinstances are objects referred to by the subject that satisfy an alternative property *instead* of the predicated one. The alternative property must be at least as salient and interesting as the predicated property. The alternative property must also be incompatible with the predicated property meaning that the objects referred to by the subject term cannot satisfy both the predicated property and the alternative property, e.g. carrying malaria is not an alternative property for a mosquito carrying the West Nile virus because a mosquito could carry both. Leslie gives the example of male birds which are positive counterinstances to “Birds are female” because they satisfy the property of being male instead of being female. *Characteristic dimensions* are dimensions of kind-relative expectations. We expect animals to move, eat, reproduce, nurture their young, etc. When it comes to artifacts and social

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<sup>8</sup>The names of the categories are mine, not Leslie’s.

kinds we expect them to have functions and purposes, e.g. if we find something we take to be a tool we expect it to have a function. A *characteristic property* for a kind is a property that lies along its characteristic dimensions, e.g. since animals are expected to move any way of moving is a characteristic property for them.<sup>9</sup> A *striking property* has a certain effect on us, such as being dangerous or appalling. An important aspect of striking properties is that they are beneficial to be forewarned about even though the chance of encountering them is low (Leslie 2008, pp. 15–16, 33–36).

Leslie’s truth conditions are

a generic of the form ‘Ks are F’ is true 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. (Leslie 2008, p. 43)

For example, “Ducks lay eggs” is a characteristic generic because laying eggs lies along the characteristic dimensions of ducks (we expect ducks to reproduce) and it is true since the counterinstances are negative, i.e. there is no duck that instead of laying eggs satisfies an alternative property, such as giving live birth, and some ducks lay eggs. “Mosquitoes carry the West Nile virus” is a striking generic since carrying the West Nile virus is a striking property and it is true since the counterinstances are negative, i.e. there is no mosquito that carries another virus or disease but cannot carry the West Nile virus, and some mosquitoes carry the virus and the others are disposed to carry it.

It is unclear how Leslie’s truth conditions relate to their logical form. Usually the logical form states truth conditions, or at least figures in their statement, but in Leslie’s theory they do not.<sup>10</sup> Leslie (2008, pp. 43–44, 2007, pp. 386–388) is not very clear on this issue and I am not sure if I completely understand her but she describes her truth conditions as worldly truth specifications or truth makers; they describe how the world must be for a generic to be true. Leslie takes semantic (or semantically derived) truth conditions to be truth conditions on the semantic level such that they respect syntax and compositionality, i.e. they are close to the structure of

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<sup>9</sup>This is what Leslie means but it is a bit unintuitive. I will return to this in section 3.1.

<sup>10</sup>This is strange and I will return to this issue in section 3.4.

the sentences in natural language for which they are truth conditions. Leslie admits that since her truth conditions are disjunctive and complex they are unfit to function as semantic truth conditions. To formulate semantic truth conditions Leslie use their logical form which means that, if I understand her correctly, they can be stated as

a generic of the form ‘Ks are F’ is true if  $\text{Gen } x [K(x)] [F(x)]$ .

Hereafter, when I refer to Leslie’s truth conditions I mean her worldly and not her semantic truth conditions.

To be able to properly evaluate Leslie’s truth conditions they need to be clarified. Her truth conditions seem to be intended to be understood as an algorithm. They are written as a list of conditions which are tried depending on whether some if statements are satisfied or not. Specifically, they test generics depending on what category they belong to and the tests decide whether they are true or false. As will be seen, thinking of them algorithmically is elucidating in understanding their consequences.

Leslie’s truth conditions first test for whether the counterinstances are negative and this test is confusing because it is stated in terms of negative rather than positive counterinstances. As I understand her truth conditions, the test is really for the absence of positive counterinstances. Negative counterinstances are already indirectly tested for in the category-specific tests, i.e. the separate tests for characteristic, striking and majority generics. The category-specific tests check if there are sufficiently many Ks that are F and these are indirect tests for if there are too many negative counterinstances because if there are sufficiently many Ks that are F, then there are not too many negative counterinstances, i.e. Ks that are not F. However, there may be sufficiently many Ks that are F *and* too many positive counterinstances, so the category-specific tests are not indirect tests for if there are too many positive counterinstances. To make this clear consider the following generic:

(33) Dogs bark.

Barking is characteristic for dogs and they are not artifacts or social kinds, so Leslie’s truth conditions for (33) mandates that the counterinstances are negative and that some dogs bark. Suppose that sufficiently many dogs bark. Then, it will necessarily be so that there are not too many negative counterinstances, i.e. dogs that do not bark. It would be superfluous to check if there are too many dogs that do not bark if it is already established that sufficiently many dogs bark. It is different for positive counterinstances. Even if some dogs bark it may be that there are too many positive counterinstances, e.g. dogs that do not bark but meow. Thus, the category-specific tests make

tests for negative counterinstances, but not tests for positive counterinstances, superfluous and, therefore, the test for counterinstances should be for the absence of positive counterinstances.

Another problem with the test for counterinstances is that it is placed first in the algorithm. It seems that what counts as positive counterinstances differ between characteristic and striking generics and, thus, the test for counterinstances should be per category rather than once in general. To make this clear consider “Birds are female” for which, as mentioned, male birds are positive counterinstances. Another example, which also is Leslie’s, is “Books are paperbacks” for which hardback books are positive counterinstances. These two examples are of characteristic generics and I take their positive counterinstances to be objects referred to by the subject that satisfy alternative properties of the *same* type as the predicated property: to be male is an alternative property of the same type as female, namely the type sex, and to be hardback is an alternative property of the same type as paperback, namely the type binding. Positive counterinstances to striking generics seems to depend on alternative properties of not the same but a different type. To explain this I will use a sentence Leslie regards as a striking generic:

(34) Rottweilers maul children.

If alternative property is taken to have the same meaning as above, i.e. an alternative property of the same type, then positive counterinstances to (34) seems to be rottweilers that *instead* do *other* horrible things to children, such as terrifying them. This cannot be correct. Suppose (34) is regarded as true and suppose that some rottweilers incapable of mauling children are seen doing other horrible things to children. Would this be a reason to doubt (34)? No. Suppose instead that some rottweilers are seen protecting children. Would this be a reason to doubt (34)? Yes. If one generalize from this example one gets that positive counterinstances to striking generics are objects referred to by the subject that satisfy alternative properties of not the same type but the *evaluatively opposite* type, such as helpful and comforting properties. Supposedly evaluatively opposite types to striking properties are always types including only non-striking properties which means that positive counterinstances to striking generics always are cases involving non-striking properties.<sup>11</sup>

That what counts as positive counterinstances differ depending on if generics are characteristic or striking suggests that Leslie’s truth conditions should

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<sup>11</sup>I take the distinction between alternative properties of the same and the evaluatively opposite type to be psychological like the distinction between positive and negative counterinstances.

be written so that the test for positive counterinstances is *per category* and not general, i.e. separate tests for positive counterinstances to characteristic, striking and majority generics. This conclusion is further strengthened by the fact that the notion of positive counterinstances for striking generics is incompatible with the one for characteristic generics. This is obvious if one, for instance, tries to find an alternative property of the evaluatively opposite type to the predicated property in “Birds are female”. There is no type that is evaluatively opposite to the type sex because sex is not a normative notion. The same goes for “Books are paperback”. There is no evaluatively opposite type to binding.

Positive counterinstances to the last category seem to be similar to positive counterinstances to characteristic generics. One example that Leslie (2008, p. 49) mentions is that positive counterinstances to “Buildings are less than one thousand feet tall” are even higher buildings in that they are rather salient. This is similar to having an alternative property of the same type. If Leslie’s truth conditions are constructed such that the test for positive counterinstances is per category and not general they will have the following form:<sup>12</sup>

- If it is a characteristic generic:
  - If there are positive counterinstances, i.e. cases of alternative properties of the same type, it is false.
  - If [...] it is true, otherwise it is false.
- If it is a striking generic:
  - If there are positive counterinstances, i.e. cases of alternative properties of the *evaluatively opposite* type, it is false.
  - If [...] it is true, otherwise it is false.
- If it is a majority generic:
  - If there are positive counterinstances, i.e. cases of alternative properties of the same type, it is false.
  - If [...] it is true, otherwise it is false.

Note that the definition of positive counterinstance for striking generics is different from the other categories. By checking for positive counterinstances per category instead of in general Leslie’s truth conditions are a bit clearer

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<sup>12</sup>To emphasize their form rather than their content I leave out some conditions by replacing them with ‘[...]’.

but there are still things that can be clarified. One issue is when the algorithm stops and that is something I will discuss in an argument against her. But before I turn the evaluation of her theory I will present the other theory I wish to evaluate.

## 2.2 Liebesman

Liebesman calls his theory *the theory of simple generics*. It is simple in taking generics to have a simple logical form and in taking generics to have simple truth conditions.

Liebesman (2011, p. 411) takes I- and D-generics to have the same logical form in that both have a bipartite structure. This means that Liebesman takes the following sentences of which the first is an I-generic and the second a D-generic

(35) Dogs bark.

(36) The dodo is extinct.

to have the logical forms

(37) Barks(dog)

(38) Extinct(dodo)

In treating I-generics to have such logical form Liebesman goes against the consensus in the literature. As suggested by his position on the logical form of generics Liebesman (2011, p. 421) takes generics to not generalize over objects but refer *directly* to kinds.

A virtue of Liebesman's view on the logical form of generics is that it, according to him, gives a better explanation than Leslie of why children learn and understand generics before explicitly quantified expressions. As mentioned above, Leslie's explanation is that the generalizations of generics correspond to a primitive cognitive mechanism. Liebesman's (2011, pp. 422–423) explanation is that children learn and understand generics before explicitly quantified expressions because generics are less complex expressions. Liebesman take generics to have the form Predicate(kind) which is simpler and requires less cognitive resources to understand than explicitly quantified expressions such as  $\forall x(\text{Dog}(x) \rightarrow \text{Mammal}(x))$ .

If generics are kind-referring, as Liebesman propose, it is important to explain how kinds can satisfy properties and what kinds are, i.e. the nature of kinds. He describes the connection between generics, kinds and properties as follows: “generics ascribe properties to kinds that are (or can be) inherited

from the members of those kinds.” (Liebesman 2011, p. 421). To explain how kinds can inherit properties from their members Liebesman (2011, pp. 420–421) compare kinds to objects: kinds inherit properties from their members in analogy to how objects inherit properties from their parts. For example, the kind tiger inherit properties from particular tigers in analogy to how a particular tiger inherit properties from its parts. The kind tiger inherits the property of being striped from particular tigers having that property. A particular tiger inherits the property of being striped from its parts having that property (parts of its fur). In these cases it seems that most members or parts must have the property for inheritance to happen. If most particular tigers did not have the property of being striped, then the kind tiger would not inherit that property. If most parts of a particular tiger’s fur did not have the property of being striped, then that tiger would not inherit that property. Examples where inheritance happens even if there are many exceptions are the following. For “Mosquitoes carry the West Nile virus” to be true the majority of mosquitoes do not have to carry the virus. It is enough that a small amount of mosquitoes carries the virus for the kind mosquitoes to inherit that property. For “The table is touching the wall” to be true the majority of the table do not have to touch the wall. It is enough that a small part of the table touches the wall for the table to inherit that property.

According to Liebesman (2011, p. 420) the seemingly erratic truth conditions of generics is due to the *countless* ways in which kinds can inherit properties from their members and due to this it is impossible to give a general account of it. Obviously this is not very satisfying. But I think it can be explained by appealing to Searle’s (1978, p. 219) notion of background. When Liebesman tries to describe how kinds inherit properties from their members he is at a level of description which requires his background assumptions to be included in the description. The problem he faces then is that he has an indefinite number of background assumptions. If he is to completely describe how inheritance happens for some kind and some property he also needs to describe the background assumptions they depend on and they in turn depend on other background assumptions, and so forth. This means that he can never complete a description of his background assumptions. If he would keep trying to describe his background assumptions he would end up with countless incomplete descriptions. For example, if he is to completely describe how the kind cat inherits the property of chasing mice he might have to include his assumption that they inherit if most cats are disposed to chase mice and this assumption depend on other assumptions which he also needs to describe, such as assumptions about what dispositions are and how many “most” are. But there are also other assumptions that he needs to describe, such as that he would not admit inheritance if it is more common that mice chase cats,

and these assumptions in turn depend on other assumptions that needs to be described, and so forth. Thus, he could never complete his description of how cats inherits the property of chasing mice. Even if this explains why Liebesman cannot give a general account of inheritance it does not justify him to barely say anything about it. A reasonable conclusion may be that he aims for a too low level of description in describing inheritance and that he rather should aim for a level at which he at least could say something. I will return to this in formulating a framework for theories of generics.

When it comes to the nature of kinds Liebesman (2011, pp. 417–418) does not give a full description but sketch some characteristics that makes kinds ontologically different from objects, sets and properties: kinds unlike objects have members but the members are not eternal like for sets, the parts of members of a kind does not have to be members of that kind, there exists a kind for every possible generic subject and kinds unlike properties have properties generally ascribed to object and sets, e.g. mankind is capable of abstract thinking but the property of being a man is not capable of abstract thinking.

To compare Liebesman to Leslie his truth condition can be formulated in a similar fashion to hers (see page 13). According to Liebesman

a generic of the form ‘Ks are F’ is true as follows:

- The kind K satisfies F.

The length of Liebesman’s truth conditions compared to Leslie’s suggest that his are simpler. However, it is implicit that inheritance does a great deal of theoretical work in Liebesman’s truth conditions, i.e. K satisfies F if K has inherited F from its members. I will return to this issue in section 3.4.

Leslie (2007, 2008) does not mention habituals but Liebesman (2011) does. He suggests that his theory also can account for habituals. He conjectures that habituals differ from generics in one way only, by not being kind-referring, and that inheritance also can explain their truth conditions:

It may be the case, then, that habituals are almost generics insofar as they meet all of the criteria except for kind-reference. In fact, talk of inheritance may work just as well with habituals. Whether “Mary swims” is true may depend on whether Mary inherits the property of swimming from her temporal parts. This type of inheritance will likely be just as varied as the inheritance of kind-properties from member properties and of ordinary object-properties from constituent properties. (Liebesman 2011, pp. 438–439, note 27)

This quote is from an endnote and Liebesman (2011, p. 412) does not elaborate on it except for suggesting that his semantics for generics may generalize to habituals. According to the quote the truth conditions for habituals are something like the following:

a habitual of the form ‘P F’ is true as follows:

- The person P satisfies F.

As for generics inheritance does a great deal of theoretical work here. For example, “John smokes” is true if John smokes, which in turn is satisfied if John has inherited smokes from his temporal parts or, in plain language, if there have been occasions where John has smoked such that the property of smoking can be attributed to not only John on particular occasions but to John.

### 3 Arguments

A theory of generics should explain, or at least not contradict, the features of generics and it should also, in being a theory, be theoretically virtuous. To evaluate Leslie’s and Liebesman’s theories I will therefore look at their explanatory power and their theoretical virtues.

#### 3.1 The argument from ambiguity

The first argument turns on the fact that generics are unambiguous. This should be entailed and not contradicted by a theory of generics. Leslie’s and Liebesman’s theories should not render unambiguous generics ambiguous if they are to agree with the actual meaning of generics.

To get this argument off the ground a definition of ambiguity is needed. Ambiguity can be defined as follows:

- A1. A sentence is ambiguous if it has two or more readings such that it is possible that one is true and another is false at the same time.

Given this definition

(39) Children cry.

is ambiguous since it is possible that it is true that children cry, as in weeping, and false that children cry, as in shouting, at the same time or the other way around. This is not meant to be a complete characterization of ambiguity but merely a definition of one type of ambiguity. It is adequate as such by

squaring with our intuitions of why a sentence, such as (39), is ambiguous. It can be instructive to rephrase A1 in terms of truth conditions and possible worlds. A reading is not equivalent to a sentence’s truth conditions but any reading implies some truth conditions. So, in terms of truth conditions and possible worlds a sentence is ambiguous if it expresses two different truth conditions and there is a possible world in which one is satisfied and another is not.<sup>13</sup>

Let us first consider Leslie’s theory. Leslie holds that generics are unambiguous.<sup>14</sup> To investigate whether this is entailed by her theory one can investigate whether her truth conditions render unambiguous generics ambiguous according to A1. One way for this to happen is if the categories in her truth conditions concludes different truth values for the same generic, e.g. if a generic is true as a characteristic generic but false as a striking generic. But

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<sup>13</sup>There are several established types of ambiguity but the relevant sense of ambiguity is hard to isolate to any such type. Following Sennet (2011, §§ 3.1–3.3) there are three main types of ambiguity. An expression is ambiguous in the *lexical* sense if the pronunciation or spelling of it have more than one meaning, e.g. “bat” is both an animal and a club. An expression is ambiguous in the *syntactic* sense if it corresponds to more than one logical interpretation, e.g. “The chicken is ready to eat” is ambiguous between the chicken being fed and the chicken being fed to someone. An expression is ambiguous in the *pragmatic* sense if it has more than one meaning given different pragmatic factors, e.g. “Can you pass the salt?” can be used as the literal question and as a request to pass the salt. Given the used example, (39), A1 is close to lexical ambiguity but it departs from any of the three types by being more explicit and defined in terms of truth. However, A1 is close to Gillon’s (2004, p. 166) definition which is more formal. By A1 being more explicit than Sennet’s definitions and less formal than Gillon’s I hope for it to be more informative than either.

<sup>14</sup>In arguing against Ariel Cohen’s account of generics Leslie explicitly claims that generics are not ambiguous: “Generics are not ambiguous; Cohen does not claim this, and it would not be right to claim it. For example, ‘Dogs have four legs’ does not have two readings, one of which is false and the other of which is true.” (Leslie 2008, p. 10). On the same page Leslie even argues conditional on generics not being ambiguous: “If generics are not ambiguous, then each generic must either be absolute or relative.” (Leslie 2008, p. 10).

One might argue that Leslie does not hold that *all* generics are not ambiguous because to state

- (1) Generics are not ambiguous.

is to state a generic and generics have exceptions. But this is a mistake. First, generics are simply not ambiguous, at least not compared to other types of sentences. Second, Leslie does not seem think that (1) is a generic because after stating it she continues “Cohen does not claim this, and it would not be right to claim it.” (Leslie 2008, p. 10) and this implies that she means that there are no exceptions. Third, if (1) is treated as a generic and interpreted by Leslie’s truth conditions it would not have any exceptions because it predicates a negative property. An exception to (1) is a generic that is ambiguous and that is a positive counterinstance because it is an instance that lacks the negative property of not being ambiguous and satisfies the alternative property of being ambiguous. This means that the occurrence of a single ambiguous generic would defeat (1).

this cannot happen given the following supposition:

S1. The algorithm stops after concluding that a sentence is true or false.

If this is true, then sentences that belongs to the first category of the algorithm will never reach the latter tests of the algorithm. For Leslie's truth conditions this means that the truth and falsity of characteristic generics *only* depend on the test for characteristic generics. This is fine as long as generics belong to *either* of the first two categories. But there are generics that are both characteristic and striking and for these S1 has strange consequences.

Consider the following sentence which I take to be an unambiguous generic:

(40) Firearms are lethal.

In a normal context it predicates the property of being lethal to firearms. It predicates a characteristic property because being lethal is a function of firearms (considered as artifacts). It also predicates a striking property because being lethal is a striking property. Given S1, the truth or falsity of (40) will *only* depend on the test for characteristic generics. Even if it also predicates striking properties its truth conditions does not depend on them because the algorithm never reaches the test for striking generics, it simply stops after concluding true or false in the first test. Thus, that lethal also is a striking property has no force in truth making. This is strange because the intuition is that being lethal is *both* characteristic and striking for firearms and, thus, both should have force in truth making. An example of why this is strange can be made by imagining a case where being lethal is characteristic and striking for firearms but firearms lack the function of being lethal, their function is to start races or some other non-lethal use. Then, (40) will be false since being lethal is characteristic for firearms and firearms lack the function of being lethal. Since the algorithm stops after testing for whether the property is satisfied as a function it makes no difference that firearms are lethal as in it being a striking property.

Similar behavior can be observed when considering another generic I take to be unambiguous:

(41) Executioners carry out death sentences.

If the algorithm stops after concluding that (41) is true as a characteristic generic, then the truth of (41) will *only* depend on if executioners satisfies the conditions for carrying out death sentences as a characteristic property. Then, the fact that executioners also satisfies the conditions for carrying out death sentences as a striking property makes no difference for the truth value of (41), it has no force in truth making. But it should make a difference,

carrying out death sentences is *both* characteristic and striking for executioners. To make this clearer imagine a case where it is characteristic and striking for executioners to carry out death sentences but they lack the function of carrying out death sentences (maybe their main, or only, function is to carry out other sorts of sentences). Then, (41) will be false because carrying out death sentences is characteristic for executioners but executioners lack the function of carrying out death sentences. That executioners carry out death sentences as in it being a striking property does not matter because the algorithm stops after concluding that (41) is false according to the conditions for characteristic properties.

To counter the imagined cases Leslie may argue that a property cannot be characteristic for a kind without that kind satisfying the conditions for characteristic generics, e.g. it cannot be that it is characteristic for executioners to carry out death sentences without them having the function of carrying out death sentences. But then Leslie's conditions for characteristic generics are redundant. If a characteristic property of a kind always satisfies her conditions for characteristic generics they can be reduced from

a generic of the form 'Ks are F' is true 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;

to

a generic of the form 'Ks are F' is true as follows:

- The counterinstances are negative, and:
- F lies along a characteristic dimension for the Ks;

which is a rather bizarre condition because what characteristic dimensions are depends on our expectations of kinds, e.g. if elephants are expected to move, then, since flying is a way of moving, "Elephants flies" satisfies the condition even if no elephant flies.<sup>15</sup> Also, this does not help with the problem it tries to mitigate, i.e. that given S1 striking properties lacks force in truth making for generics that are both characteristic and striking. Even if such generics always satisfies the conditions for characteristic generics the conditions for striking generics will have no force in truth making.

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<sup>15</sup>Supposedly it is still rendered false since there are positive counterinstances, e.g. walking and running elephants that cannot fly.

If one generalize from the two presented cases, then S1 has the consequence that the truth or falsity of a generic belonging to more than one of Leslie's categories *only* depend on the first category it belongs to and not on the other categories it belongs to – the other categories it belongs to are impotent when it comes to truth. This means that what makes a generic true or false depends on the order of the algorithm and this is strange. There is no reason to assume that characteristic generics have priority over striking generics or that striking generics have priority over majority generics. Also, Leslie gives no explicit argument for the order of the categories in her truth conditions. All this suggests that there is no reason to assume that one category has priority over another and given this it can be concluded that S1 is wrong.

The only other reasonable suppositions for when the algorithm stops are the following:<sup>16</sup>

S2. The algorithm stops after testing all categories.

S3. The algorithm stops after concluding that a sentence is true or, if it is not concluded as true, after testing all categories.

The problem with these is that they make ambiguous readings of unambiguous sentences possible. As long as it is supposed that the algorithm can continue past the first category ambiguous readings of unambiguous sentences are possible.

Consider again the sentence

(42) Firearms are lethal.

If the algorithm continues past the first category it is possible that it concludes that (42) is true according to the test for characteristic generics but false according to the test for striking generics or the other way around (that it is false according to the test for characteristic generics and true according to the test for striking generics). This is possible because the conditions for characteristic and striking generics do not necessarily give the same truth value to a given sentence. For example it is possible that (42) is true according to the test for characteristic generics because being lethal is a function of firearms but false according to the test for striking generics because not enough firearms are lethal or not enough firearms are disposed to be lethal.

Consider again the sentence

(43) Executioners carry out death sentences.

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<sup>16</sup>There are lots of other possible suppositions, such as the algorithm never starting, never stopping or stopping for irrelevant reasons, but they are obviously not reasonable.

It might be that the function of executioners is to carry out death sentences but that no executioner has ever carried out a death sentence. Then, (43) satisfies the first but not the second category of Leslie's truth conditions. Note that (42) and (43) are not the only sentences that has the described effect on Leslie's truth conditions. To construct similar sentences one only needs to find generics that are both characteristic and striking.

For both (42) and (43) it is possible that Leslie's truth conditions render one reading as true and another as false. This means that her truth conditions render them ambiguous (this holds both for her original truth conditions and the revised version). Thus, there is a conflict: (42) and (43) are unambiguous and Leslie's truth conditions render them ambiguous. Note that the possibility of ambiguity is greater given the supposition that the algorithm test all categories (it makes possible for three conflicting readings) and also if positive counterinstances to striking and characteristic sentences are different.

Liebman's theory is not susceptible to the argument from ambiguity. Given A1 and given his truth conditions a generic is ambiguous if it has two or more readings such that it is possible that for one the kind in question has inherited the predicated property from its members and for the other it has not. For example, the argument of ambiguity would be successful against Liebman if the generic

(44) Executioners carry out death sentences.

given his truth conditions has two readings such that for one reading the kind executioner has inherited the property of carrying out death sentences from particular executioners and for the other it has not. It may be argued that this is not possible since Liebman's truth conditions only has one condition and could, thus, only give one reading. This is a sensible conclusion but to make the argument even clearer I will base it on an assumption that Liebman does not make, at least not explicitly. Liebman does, as mentioned, not say much about inheritance expect that it is not possible to give a general account on how it works. However, it is reasonable to assume that a kind cannot both have inherited and not inherited a property. I take it that if a kind has inherited a property from its members in some way this is *not* defeated by the fact that it has not inherited that property in some other way, e.g. if the kind tiger has inherited the property of being striped from particular tigers in virtue of most tigers being striped this is not defeated by the fact that the kind tiger has not inherited the property of being striped in virtue of it being a function of tigers. Given this assumption it cannot be that a generic has two or more readings such that it is possible that for one the kind in question has inherited the predicated property from its members

and for the other it has not. So, given the assumption Liebesman's theory does not contradict that generics are unambiguous.

To conclude this argument, when it comes to entailing that generics are unambiguous Liebesman's theory is better than Leslie's. If a theory has the consequence that generics are ambiguous, when they are not, that theory is failing. In coming up with a theory of generics one wants to avoid such failure.

### 3.2 The argument from D-generics

The second argument turns on the fact that I- and D-generics should be handled uniformly.<sup>17</sup> This is something that Leslie's theory contradicts and something that Liebesman's theory confirms.

Koslicki (1999, pp. 447–448) argues that treating I- and D-generics as having different logical forms leads to systematic semantic ambiguity in that the same subject can refer both to instances of a kind and a kind itself. An example of this is the following sentences of which the first is an I-generic and the second a D-generic:

(45) Pandas eat bamboo.

(46) Pandas are endangered.

According to Leslie they have the following logical forms:

(47)  $\text{Gen } x [\text{Pandas}(x)] [\text{Eat bamboo}(x)]$

(48)  $\text{Endangered}(\text{panda})$

Clearly the subjects in (47) and (48) have different referents. 'Pandas( $x$ )' refer to objects that are pandas, i.e. instances of a kind, and 'panda' refer to the kind panda. It is strange that the subject in sentence pairs such as (45) and (46) refer to different things because intuitively it refers to the same thing. This intuition goes against Leslie view of their logical form.

A similar argument builds on the observation that there are sentences that are both I- and D-generic (Krifka et al. 1995, p. 88; Koslicki 1999, p. 449; Liebesman 2011, p. 414). Examples of such sentences are the following:

(49) Pandas, which eat bamboo, are endangered.

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<sup>17</sup>This is the only argument that builds on the work of others. Arguments for treating I- and D-generics uniformly have been presented by Greg N. Carlson (1977, pp. 434–435, 442–444), Koslicki (1999) and Liebesman (2011). What I do is to turn them specifically against Leslie and Liebesman.

(50) Gold, which is valuable, was discovered by the Sumerians.

If I- and D-generics are treated as having different logical forms the subject in these sentences will have different logical forms. For example (49) will have the following logical form:

(51)  $\text{Gen } x [\text{Pandas}(x)] [\text{Eat bamboo}(x)] \wedge \text{Endangered}(\text{panda})$

This can be understood as “Generally objects that are pandas eat bamboo and the kind panda is endangered”. Koslicki (1999, p. 449) argues that this treatment is inelegant and that it goes against our intuitions and Liebesman (2011, p. 414) argues that it “is mysterious how a single term occurrence could do so much”. I agree. The intuition is that the subject refer to one thing and not two. Since Leslie treats I- and D-generics as having different logical forms she goes against this intuition.

Another consequence of treating I- and D-generics as having different logical forms is that it is not obvious how inferences involving both types are possible. Liebesman (2011, pp. 413–414) observes that if it is known that an I-generic is true and that a D-generic of the same subject is true, then it can be inferred that the subject satisfies the predications of both sentences. To exemplify this, consider that (45) and (46) is known. It can then be inferred that

(52) Pandas eat bamboo and are endangered.

Liebesman’s argues that the best explanation for such inferences is that I- and D-generics have the same logical form. According to Leslie they have a different logical form and, thus, she does not give the best explanation of such inferences. Leslie understands the premises (45) and (46) logically as (47) and (48). But then the premises have different subjects and it is therefore less obvious that (52) can be inferred from the premises than if the premises had the same subject.

Given that I- and D-generics should be treated the same, or at least similarly, another problem arises for Leslie. Her truth conditions are mostly based on objects, so even if she admits that I- and D-generics should be handled uniformly her truth conditions cannot handle D-generics. To show this consider the sentence “The dodo is extinct” and look at the first condition of her truth conditions. Note that this condition is simply not fit to handle D-generics because counterinstances are exceptions and, as mentioned in section 1, D-generics neither have nor are sensitive to exceptions. The latter conditions of her truth conditions are even worse in handling D-generics because most of them are about extensions. For characteristic generics that are not about artifacts or social kinds the condition is that some Ks are F,

for striking generics the condition is that some Ks are F and that the others are disposed to be F and for all other generics the condition is that almost all Ks are F. Such conditions rely on there being a set that overlaps with another set in virtue of some objects being elements of both sets. The problem is that D-generics cannot be analyzed in such terms. The predication of being extinct of the kind dodo does not express that the set of dodos overlap with set of things that are extinct because, as mentioned in section 1, being extinct is not a property that is possible for objects to satisfy. Since the majority of the conditions in her truth conditions are about overlaps of sets they are simply unfit to handle D-generics. One condition of her truth conditions that might however be able to handle D-generics is the conditions for characteristic generics about artifacts and social kinds because kinds seems to be able to have functions or purposes. However, I am not sure whether there are D-generics that predicate functions or purposes. That Leslie's truth conditions, even if force fed, cannot swallow D-generics implies that it would be hopeless to try adjust her truth conditions to account for D-generics. Thus, if I- and D-generics should be handled uniformly Leslie's truth conditions is a very poor candidate.

Liebman does not have any of the problems that Leslie has in explaining interaction of I- and D-generics. He treats them as having the same logical form and is thus not susceptible to arguments that turns on them being treated differently.

To conclude this argument, Liebman's theory is better than Leslie's in accounting for how I- and D-generics interact. A theory of generics should explain the meaning of all types of generics and inferences between them. If a theory fails to explain these things because it treats I- and D-generics differently one should, in coming up with a theory of generics, avoid to treat them differently.

### 3.3 The argument from modality

The third argument turns on the fact that generics, as mentioned in section 1, are modal. This is something both Leslie and Liebman have problems in accounting for.

Consider the following sentence which can be understood as a characteristic generic:

(53) Cats have whiskers.

Leslie's truth conditions for characteristic generics that are not about artifacts or social roles are that they have no positive counterinstances and that some Ks are F. The problem with these conditions is that they do not depend

on dispositions. They will be satisfied even if no future or possible cat have whiskers. To illustrate this imagine that all cats temporarily have lost their whiskers, perhaps they have all been burnt off, ripped off in fights or removed by some wicked persons. Would (53) then be false since no cat has whiskers? I take it that the intuition is that (53) is still true. But imagine that every cat (including every cat fetus) is hit with cosmic rays that change their DNA so that they lose their ability to grow whiskers. Then, no cat will have whiskers nor have the disposition to grow whiskers. Would (53) then be true? No. So, what is required for the truth of (53) is that cats have the disposition to grow whiskers and the absence of positive counterinstances (whatever that might be, bearded whiskerless cats?) If one generalize from this example one can conclude that Leslie's truth conditions for characteristic generics do not account for their modal character. But characteristic generics are not the only category for which her truth conditions are problematic in this sense.

Consider the following sentence which can be understood as a striking generic:

(54) Firearms are lethal.

Leslie's truth conditions for striking generics are that they have no positive counterinstances and that some Ks are F and that the others are disposed to be F. So, (54) is true since there are no positive counterinstances and some firearms are lethal and firearms are disposed to be lethal. To illustrate why these conditions do not account for the modal character imagine that all firearms happen to misfire, then no firearm is lethal but firearms are still disposed to be lethal. In this scenario (54) is false according to Leslie's truth conditions. But I take it that the intuition is that (54) is still true. If all firearms happens to misfire they are still potentially lethal, maybe they will fire properly the next time the trigger is pulled. If one generalize from this example one can conclude that Leslie's truth conditions for striking generics do not account for their modal character.

The conclusion that Leslie's truth conditions should account for the modal character of generics is strengthened by the modal character of habituais. Given the similarities of generics and habituais mentioned in section 1 there are strong reasons for treating them alike. It can then be argued that theories accounting for one should also account for the other. For Leslie this means that since she accounts for generics she should also account for habituais. The problem for her is that, as mentioned in section 1, habituais, like generics, are modal.

Consider the following sentence which can be understood as a habitual:

(55) John smokes.

If this sentence is forced on Leslie's truth conditions the most reasonable interpretation seems to be that conditions for it are that there are no positive counterinstances and that some temporal parts of John smokes. The problem with these conditions is that they can be satisfied even if no future temporal part of John smokes and even if John does not smoke in any possible situation. In other words, the conditions do not account for the modal character of (55).

When it comes to modality Liebesman seems to have problems similar to Leslie's. As mentioned, Liebesman is not entirely clear on how inheritance works but he seems to mean that it does not work with dispositions, i.e. that kinds do not inherit dispositions from their members. So, I assume that kinds do not inherit dispositions. If this is the case his truth conditions do not account for the modal character of generics.

Consider the following sentence which can be understood as a generic:

(56) Lawyers wear suits.

Supposedly Liebesman would say that this is true if the kind lawyer has inherited the property of wearing suits from particular lawyers that wear suits. The problem with these conditions is that if sufficiently many particular lawyers wear suits for the kind lawyer to inherit that property, then (56) will be true even if no future or possible lawyer wear suits. To further clarify this problem consider the following sentence which also can be understood as a generic:

(57) Firemen fight fires.

Imagine that firemen have not fought any fires because there has not been any fires yet. Then, (57) will be false because the kind firemen can only inherit the property of fighting fires from particular firemen fighting fires and not from particular firemen merely having the disposition of fighting fires.

Liebesman also have problems in accounting for the modal character of habituals. As mentioned in section 2.2, Liebesman suggests that his theory can handle habituals. Consider the following sentence which can be understood as a habitual:

(58) Ethel sleeps on her side.

Supposedly Liebesman would say that this is true if Ethel has inherited the property of sleeping on her side from her temporal parts that sleeps on their side, and not merely have the disposition of sleeping on their side. The problem is that if sufficiently many of her temporal parts sleeps on their side for her to inherit that property, then (58) will be true even if none of her future or possible temporal parts sleeps on their side.

To conclude this argument, both Leslie and Liebesman fail in explaining the modality of generics. Since modality is part of the meaning of generics a theory of generics should explain it. Thus, in coming up with a theory of generics one wants to make sure that it can account for their modal character.

### 3.4 The argument from parsimony

The fourth argument turns on the theoretical virtue of parsimony. To strive for explanatory parsimony is to choose the simplest explanation. In this case the explanations are of generics. So, for this case the principle is that all other things being equal one should choose the simplest explanation of generics.

Compared to Leslie's theory Liebesman's is at first sight much more parsimonious but if one looks closer it is only clearly more parsimonious in one way. The following compares parsimony for Leslie's and Liebesman's theories on three points.

First, Leslie holds that I- and D-generics have different logical forms when it is possible to, like Liebesman, hold that they have the same logical form and in this sense Liebesman's theory is clearly simpler.

Second, Leslie holds that the truth conditions are complex when it is possible to hold that they are simple like Liebesman's. But this is only to scratch the surface. If one goes deeper into the issue one notices that the complexity of Leslie's truth conditions correspond to what in Liebesman's theory is regarded as impossible to explain. In Liebesman's theory inheritance does a great deal of theoretical work in linking kinds and properties. Since Liebesman does not think that it is possible to give a general account of inheritance he does not try to account for it. The corresponding part of Leslie's theory is very detailed in comparison. Her truth conditions describe the link between kinds and properties explicitly. Thus, since Liebesman does not even attempt to explain inheritance it can be argued that it cannot be held against Leslie that her truth conditions are more complex than his. In fact Leslie's theory is clearer and more complete than Liebesman's in this sense. It may also be argued that if Liebesman tried to come up with an explanation of inheritance it might be as complex as Leslie's truth conditions. However, if Liebesman is right in it being impossible to give a general account of inheritance, then it will only be foolish to attempt to give one. Proponents of Liebesman might say that inheritance is primitive or something underlying the truth conditions that is not really part of them, i.e. that the proper level of description does not include inheritance. If this view is accepted Liebesman's truth conditions are clearly more simple than Leslie's.

Third, Leslie's holds that what she calls the worldly truth conditions deviate from what she calls the semantic truth conditions when it is possible

to hold that there is no such deviation. As suggested in section 2.1 Leslie is aware of the deviation and she does not seem to take it as something problematic. To make the deviation clear I will give an example. Consider the following sentence:

(59) Lions have manes.

According to Leslie having manes is characteristic for lions so its worldly truth conditions are

“Lions have manes” is true if

- there are no positive counterinstances, and
- some lions have manes.

Compare this with its semantic truth conditions which Leslie seems to understand as the satisfaction of its logical form:

“Lions have manes” is true if  $\text{Gen } x [\text{Lion}(x)] [\text{Has mane}(x)]$ .

As can be seen Leslie’s worldly truth conditions deviate greatly from her semantic truth conditions. There are reasons for there being no such deviation because to be *truth conditions* worldly and semantic truth conditions must refer to the same thing, even if at different levels description. If they describe the same thing they must always obtain under the exact same circumstances but this is not clear from comparing the conditions above. It seems obvious that worldly truth conditions refer to how the world must be for something to be true. It is less clear what semantic truth conditions refer to but, as mentioned, Leslie seems to take the semantic truth conditions to be the satisfaction of the logical form. Then, I see no other way to understand Leslie’s worldly and semantic truth conditions than as referring to the same thing. The question is how they can be different *and* refer to the same thing. Thus, the relation between worldly and semantic truth conditions screams out for explanation but Leslie does not explain it except for saying that they also deviate for other types of sentences than generics. This issue is clearer for Liebesman.

Liebesman (2011, p. 420) never talks of worldly and semantic truth conditions but of truth conditions and semantic structure of which I take the latter to be similar to logical form. To make a comparison of Liebesman’s truth conditions and their logical form consider the following sentence:

(60) Cats chase mice.

Its truth conditions are:

“Cats chase mice” is true if the kind cat satisfies the property of chasing mice.

Its logical form is:

Chase-mice(cat)

That ‘Chase-mice(cat)’ merely is a formal expression of “the kind cat satisfies the property of chasing mice” suggests that what in Liebesman’s theory correspond to worldly and semantic and truth conditions barely deviates. However, if one looks closer one notices that Liebesman’s truth conditions depend on inheritance which, as mentioned, is something Liebesman does not account for. It may be argued that if the conditions for a particular kind to inherit a particular property were to be made explicit there would be a clear deviation from the semantic truth conditions. Consider (60) again. If Liebesman had to describe the conditions under which the kind cat inherit the property of chasing mice, then the conditions might be lengthy and clearly deviate from the semantic truth conditions. For example, he might have to describe the following: how many cats chasing mice that are necessary for inheritance, what counts as relevant mice chasing situations and why occurrences of the inverse relation do not defeat it (mice chasing cats). So, this point, just like the second, depend on what the proper level of description is for the truth conditions. If the proper level of description is kinds and properties without having to describe their underlying link, then Liebesman is more parsimonious in this sense. If the proper level of description forces a description of inheritance, then it is not clear that Liebesman is more parsimonious in this sense.

To conclude this argument, it is clear that Liebesman is more parsimonious than Leslie in virtue of treating I- and D-generics the same, but it is not clear whether his theory is more parsimonious when it comes to having simple truth conditions or having little deviation between worldly and semantic truth conditions. There is a tension between Leslie and Liebesman in that Leslie’s theory has complex truth conditions and deviation between them and the logical form and that Liebesman’s has simple truth conditions and no explanation of inheritance. This tension seems to be founded in the question of what is the right level of description. In coming up with a theory of generics one wants to avoid such tension by justifying its level of description.

## 4 Synthesis

### 4.1 A simple framework

In studying Leslie's and Liebesman's theories one can observe that they, roughly, can be split into descriptions of the following:

1. The logical form of generics.
2. The truth conditions of generics.
3. How kinds have properties.

The first two points should be clear. In Leslie's theory the third point correspond to her worldly truth conditions which can be understood as describing ways for kinds to satisfy properties. In Liebesman's theory the third point correspond to inheritance.

When comparing how well Liebesman and Leslie account for the three points one notice that their truth conditions are very different. This is strange assuming that they aim to explain the same thing. One way to explain this is to say that their truth conditions are at different levels of description. Leslie's truth conditions are at a lower level because they give a more detailed description and Liebesman's are at a higher level because they give a less detailed description. But then there are still two very different truth conditions for generics and this is confusing. The most compelling way to overcome this confusion seems to be to say that Leslie mistakes truth conditions for a description of how kinds have properties. Among other things this is a reasonable explanation because the difference of truth conditions of generics and descriptions of how kinds have properties seems to mostly be in terms level of description. What Leslie does is to choose a too low level of description for her truth conditions, a level at which it would more apt to describe how kinds have properties.

One reason for treating Leslie's truth conditions not as truth conditions but as a description of how kinds have properties is that the problem with ambiguity can then be avoided. As mentioned in section 3.1, it is reasonable to assume that if a kind has inherited a property from its members in some way this is not defeated by the fact that it has not inherited that property in some other way. This assumption blocks the argument from ambiguity and it holds for Leslie's truth conditions if they are not treated as truth conditions but as a description of inheritance.

That Leslie's truth conditions should be seen not as truth conditions but as a description of inheritance also says something about Liebesman's theory. As mentioned he thinks that it is impossible to give a general account of

inheritance. He may be right for very low levels of description. But for higher levels of descriptions, i.e. if one is allowed to be a bit less detailed, one may at least come up with an outline of inheritance, such as Leslie's truth conditions treated as one. This means that Liebesman tries to describe inheritance at a too low level of description and this is a mistake because he ends up with a description of inheritance which barely says anything about it when it is possible to say something about it. Therefore I suggest that one should explain how kinds have properties at an *informative* level of description, i.e. at a level of description where it is possible to give a general and interesting description of how kinds have properties.

I have argued that Leslie's truth conditions should not be treated as truth conditions but as a description of how kinds have properties. Then Liebesman's truth conditions are favoured as the truth conditions for generics. But his are not the only truth conditions for generics so there should also be independent reasons for favoring his. In addition to what has already been said in favor of his truth condition in this paper they are favourable in that their level of description are close to logical form. Opinions may diverge of what the best level of description *for truth conditions* of generics is but there are reason for preferring one that is close to logical form. Logical form is at a level of description where everything necessary for valid reasoning is explicit, such as everything that contributes to the meaning of sentences. Given that logical form is at the best level of description for truth conditions of generics there is a close relation between the logical form of generics and their truth conditions. One may even go so far as saying that the truth conditions of generics is expressed by the satisfaction of their logical form and I think this is the right way to go because deviation between truth conditions and logical form is not desirable (as argued in section 3.4). This may, even if it is slightly question-begging, explain why Leslie's truth conditions do not include the logical form she takes generics to have. It is because her truth conditions are not really truth conditions but a description of how kinds have properties.

To sum up, a reasonable framework for theories of generics seems to be the following:

A theory of generic should:

1. Explain the logical form and the truth conditions of generics and state the truth conditions as the satisfaction of the logical form.
2. Explain how kinds have properties at an informative level of description.<sup>18</sup>

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<sup>18</sup>I take this framework to hold for theories of habituais too though for habituais the

Providing a complete justification for this framework is outside the scope of this paper and so I will take it for granted. The framework is not a theory but a way to make theories clearer by *compartmentalization*, i.e. for keeping apart things that should be handled differently. The first level deals with truth, logical form, meaning and ambiguity. The second level deals with the link between kinds and properties for which metaphysical and psychological aspects are relevant, e.g. what kinds and properties are and what counts as exceptions and counterinstances. Even if the second level forms a basis for the first level they are more or less independent. For example, ambiguity is relevant on the first level because there is meaning and truth at that level but it is not relevant on the second level because there is not meaning and truth at that level. The framework can be used to evaluate theories of generics but also as guidance when formulating a theory of generics, such as synthesising Leslie's and Liebesman's theories.

If one places Leslie's and Liebesman's theories in the framework it is reasonable to end up with the following synthesis. The logical form and the truth conditions for generics and habituais are in accordance with Liebesman's theory but the tight connection between the logical form and the truth condition is made more explicit. The truth conditions for I- and D-generics are:

A generic of the form 'Ks are F' is true if the kind K satisfies F,  
i.e. if Predicate(kind).

The truth conditions for habituais are similar except that they refer to persons rather than kinds:

A habitual of the form 'P F' is true if the person P satisfies F,  
i.e. if Predicate(person).

This theory may be enough to account for D-generics since they predicate something directly of a kind. However, for I-generics and habituais this is not enough because the links between kinds and properties and between persons and properties are not sufficiently explained. Obviously it is not satisfying to leave these links unexplained, e.g. there is then no explanation of why generics and habituais have exceptions or why "Birds are female" is false. But the links can be explained in terms of inheritance and this is where Leslie's theory comes into the synthesis.

Leslie's truth conditions can be converted into an outline of how inheritance works, i.e. as a list of ways in which inheritance can happen. Then her truth

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second point should be about the relation between persons and properties rather than kinds and properties.

conditions are *not* treated as truth conditions but as a primitive background to them – inheritance is not the truth conditions but a basis for them that is given as they are evaluated, e.g. when it is evaluated whether the kind tiger is striped the properties that the kind tiger has and has not inherited from particular tigers are given.<sup>19</sup> If used directly her truth conditions can be converted into the following outline of *inheritance*:

The kind K inherits the property F from its members 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.

But this will have to be refined for several reasons.

## 4.2 A more adequate description of inheritance

To make the outline of inheritance avoid some problems mentioned in this paper it will be adjusted as follows:

- In section 2.1 it was concluded that what counts as positive counterinstances differ depending on if the predicated property is characteristic or striking. As mentioned, this can be fixed by checking for positive counterinstances per category rather than in general.
- In section 3.3 it was concluded that Leslie and Liebesman has problems in accounting for the modal character of generics and habituals. This can be avoided by admitting inheritance of dispositions. Note that even if the conditions are expressed in terms of dispositions most cases are such that some members of a kind with a disposition manifest that disposition, i.e. satisfies the corresponding property.

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<sup>19</sup>The distinction between truth conditions and inheritance is similar to the distinction Leslie (2008, pp. 43–44, 2007, pp. 386–388) and Liebesman (2011, p. 420) makes between semantic structure/truth conditions and (worldly) truth conditions but the former is clearer on how they relate in that it is explicitly stipulated, i.e. that inheritance is primitive for the truth conditions.

An issue that has not been discussed but which the outline should adjust for is to say how good predictor a kind has to be of a striking property for the kind to inherit it. In discussing how generics are learned Leslie (2008, p. 41, 2007, p. 385) mentions that a striking generic should be such that the kind is a good predictor of the predicated property but she does not include it in her truth conditions. The requirement is for avoiding poor generalizations, such as prejudice (Leslie 2012). To exemplify the problem of not including the requirement consider the following sentence:

(61) Rottweilers maul children.

Leslie's truth conditions for it are that there are no positive counterinstances, that some rottweilers maul children and that rottweilers are disposed to maul children. These conditions are supposedly satisfied. Consider the following sentence which is more general than (61):

(62) Dogs maul children.

Since rottweilers are a subset of dogs and dogs share many properties with rottweilers this sentence also satisfies the conditions. The generalization can be further widened to canids (dogs, wolves, foxes, jackals, coyotes, etc.) But as the generalization is widened, and even though some members of the kind have mauled children and a weak disposition to do so is present across the kind, it gets more evident that the kind is a bad predictor of the predicated property. Neither dogs nor canids are good predictors of the property of mauling children. Without the requirement of the kind being a good predictor of the predicated property there seems to be no limit to how wide generalizations of (61) that Leslie's truth conditions will deem as true. Possibly, they will even render "Entities maul children" true. This should be avoided. But requiring a good predictor may be too strong a requirement, therefore I settle for requiring a somewhat weaker predictor, a decent predictor. Note that in the outline the issue has to do with inheritance rather than truth, so what is required is that for a kind to inherit a striking property it has to, in addition to the other conditions, be a decent predictor of that property.

By observing the mentioned points the outline of inheritance can be modified into the following:

The kind  $K$  inherits the property  $F$  from its members  $k$  if:<sup>20</sup>

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<sup>20</sup>Or equivalently for habituals: The person  $P$  inherits the property  $F$  from its temporal parts  $p$ .

- If F is characteristic for K, there are no positive counterinstances, i.e. cases of alternative properties of the same type, ks are disposed to be F, unless K is an artifact or social kind, in which case F is the function or purpose of ks.
- If F is striking, there are no positive counterinstances, i.e. cases of alternative properties of the evaluatively opposite type, ks are disposed to be F and K is a decent predictor of F.
- There are no positive counterinstances, i.e. cases of alternative properties of the same type, and almost all ks are F.

This outline only describe some, and not all, ways for inheritance to happen. Thus, it is obviously a weak description but considering Liebesman's verdict that it is impossible to give a general account of inheritance an outline like this may be the best one can come up with. Note that the outline only describe when inheritance happens and not when it is defeated and this is because it is assumed that if inheritance happens in some way it cannot be defeated by the fact that it does not happen in some other way. A consequence of the outline not describing when inheritance is defeated is that the order of the outline does not matter, i.e. no way of inheriting has priority over another. Thus, the items in the outline should be seen as parallel rather than ordered. Things that needs to be clarified but which I leave unresolved are the following: how functions and purposes are determined (is only the main function relevant, e.g. is rescuing cats the function of firemen or is it only to fight fires?), how dispositions are determined, what a decent predictor is and the nature of kinds and persons.

## 5 Conclusion

Two things have been concluded about theories of generics in this paper: that they should be formulated within a particular framework and that a reasonable and complete theory of generics can be formed by synthesising Leslie's and Liebesman's theories within that framework.

It was worthwhile to compare the very different theories of Leslie and Liebesman. Liebesman's theory was found to be less susceptible to the presented arguments. But this is a somewhat misleading description of the situation. A better description is that their theories should be seen as explaining different things and that where one of them fails the other one succeeds. The truth conditions and the logical form in Liebesman's theory seems correct but he does not explain inheritance. The logical form and the truth conditions in Leslie's theory are problematic but her truth conditions

can serve as a description of inheritance. These conclusions are important for further development of Leslie’s and Liebesman’s theories: Leslie has to adjust the truth conditions and logical form in her theory to avoid problems and Liebesman has to say something more substantial about inheritance.

Before Leslie’s and Liebesman’s theories were synthesized a framework for generics was presented – a framework for thinking about any theory of generics. The main idea of the framework is to compartmentalize theories of generics so that the truth conditions and the logical form is handled apart from descriptions of how kinds have properties. The framework and the found shortcomings and strengths of Leslie’s and Liebesman’s theories were observed as their theories were synthesized by basing the explanation of the truth conditions and logical form of generics on Liebesman’s theory and inheritance on Leslie’s truth conditions. Obviously both the framework and the synthesis need further work to be wholly acceptable but that is outside the scope of this paper.

## References

- Asher, Nicholas and Michael Morreau (1995). “What Some Generic Sentences Mean”. In: *The Generic Book*. Ed. by Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 300–338. ISBN: 9780226092928 (cit. on pp. 2, 3, 5).
- Brandone, Amanda C. et al. (2012). “Do Lions Have Manes? For Children, Generics Are About Kinds Rather Than Quantities”. In: *Child Development* 83.2, pp. 423–433. ISSN: 14678624. DOI: 10.1111/j.1467-8624.2011.01708.x (cit. on p. 11).
- Carlson, Greg (2008). “Patterns in the Semantics of Generic Sentences”. In: *Time and Modality*. Ed. by Jacqueline Guéron et al. Vol. 75. Studies in Natural Language and Linguistic Theory. Springer Netherlands, pp. 17–38. ISBN: 9781402083549. DOI: 10.1007/978-1-4020-8354-9\_2 (cit. on pp. 3, 8, 9).
- Carlson, Greg N. (1977). “A unified analysis of the English bare plural”. In: *Linguistics and Philosophy* 1.3, pp. 413–457. ISSN: 01650157. DOI: 10.1007/BF00353456 (cit. on pp. 2, 5, 26).
- (1999). “Evaluating Generics”. In: *Studies in the Linguistic Sciences* 29.1: *Papers in Semantics*. Ed. by Peter L. Lasnik, pp. 13–24. ISSN: 00492388. URL: <http://hdl.handle.net/2142/9664> (cit. on p. 3).
- Carlson, Gregory N. (1995). “Truth Conditions of Generic Sentences. Two Contrasting Views”. In: *The Generic Book*. Ed. by Gregory N. Carlson and

- Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 224–237. ISBN: 9780226092928 (cit. on p. 3).
- Carlson, Gregory N. and Francis Jeffrey Pelletier, eds. (1995). *The Generic Book*. Chicago: University of Chicago Press. ISBN: 9780226092928.
- Cheng, Kai-Yuan (2011). “A new look at the problem of rule-following: a generic perspective”. In: *Philosophical Studies* 155.1, pp. 1–21. ISSN: 00318116. DOI: 10.1007/s11098-010-9561-9 (cit. on p. 11).
- Chierchia, Gennaro (1995). “Individual-Level Predicates as Inherent Generics”. In: *The Generic Book*. Ed. by Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 176–223. ISBN: 9780226092928 (cit. on pp. 3, 8).
- Cimpian, Andrei, Amanda C. Brandone, and Susan A. Gelman (2010). “Generic Statements Require Little Evidence for Acceptance but Have Powerful Implications”. In: *Cognitive Science* 34.8, pp. 1452–1482. ISSN: 15516709. DOI: 10.1111/j.1551-6709.2010.01126.x (cit. on p. 11).
- Dahl, Östen (1975). “On generics”. In: *Formal Semantics of Natural Language. Papers from a colloquium sponsored by the King’s College Research Centre, Cambridge*. Ed. by Edward L. Keenan. Cambridge: Cambridge University Press, pp. 99–111. ISBN: 0521206979 (cit. on pp. 8, 9).
- (1995). “The Marking of the Episodic/Generic Distinction in Tense-Aspect Systems”. In: *The Generic Book*. Ed. by Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 412–425. ISBN: 9780226092928 (cit. on p. 3).
- Geurts, Bart (1985). “Generics”. In: *Journal of Semantics* 4.3, pp. 247–255. ISSN: 01675133. DOI: 10.1093/jos/4.3.247 (cit. on p. 2).
- Gillon, Brendan S. (2004). “Ambiguity, Indeterminacy, Deixis, and Vagueness. Evidence and Theory”. In: *Semantics. A Reader*. Ed. by Steven Davis and Brendan S. Gillon. New York: Oxford University Press, pp. 157–187. ISBN: 0195136985 (cit. on p. 21).
- Haslanger, Sally (2011). “Ideology, Generics, and Common Ground”. In: *Feminist Metaphysics. Explorations in the Ontology of Sex, Gender and the Self*. Ed. by Charlotte Witt. Dordrecht: Springer Netherlands, pp. 179–207. ISBN: 9789048137831. DOI: 10.1007/978-90-481-3783-1\_11 (cit. on p. 11).
- Herbelot, Aurelie (2011). *Underspecified quantification*. Tech. rep. UCAM-CL-TR-795. University of Cambridge, Computer Laboratory. URL: <http://www.cl.cam.ac.uk/techreports/UCAM-CL-TR-795.pdf> (cit. on p. 11).
- Keenan, Edward L., ed. (1975). *Formal Semantics of Natural Language. Papers from a colloquium sponsored by the King’s College Research Centre, Cambridge*. Cambridge: Cambridge University Press. ISBN: 0521206979.

- Khemlani, Sangeet, Sarah-Jane Leslie, and Sam Glucksberg (2008). “Syllogistic reasoning with generic premises. The generic overgeneralization effect”. In: Proceedings of the 30th Annual Conference of the Cognitive Science Society. Ed. by B. C. Love, K. McRae, and V. M. Sloutsky. Cognitive Science Society. Austin, TX, pp. 619–624. URL: <http://csjarchive.cogsci.rpi.edu/proceedings/2008/pdfs/p619.pdf> (cit. on p. 11).
- (2009). “Generics, prevalence, and default inferences”. In: Proceedings of the 31st annual conference of the Cognitive Science Society. Ed. by Niels Taatgen et al. Cognitive Science Society. Austin, TX. URL: <http://csjarchive.cogsci.rpi.edu/proceedings/2009/papers/80/paper80.pdf> (cit. on p. 11).
- (2011). “Inferences about members of kinds. The generics hypothesis”. In: *Language and Cognitive Processes*, pp. 1–14. DOI: 10.1080/01690965.2011.601900 (cit. on p. 11).
- Khemlani, Sangeet, Sarah-Jane Leslie, Sam Glucksberg, and Paula Rubio Fernandez (2007). “Do ducks lay eggs? How humans interpret generic assertions”. In: Proceedings of the 29th annual conference of the Cognitive Science Society. Ed. by Danielle S. McNamara and J. Gregory Trafton. Cognitive Science Society. Austin, TX, pp. 395–401. URL: <http://csjarchive.cogsci.rpi.edu/proceedings/2007/docs/p395.pdf> (cit. on p. 11).
- Koslicki, Kathrin (1999). “Genericity and Logical Form”. In: *Mind & Language* 14.4, pp. 441–467. ISSN: 14680017. DOI: 10.1111/1468-0017.00120 (cit. on pp. 3, 26, 27).
- Krifka, Manfred (1987). “An Outline of Genericity”. In: Seminar für natürlich-sprachliche Systeme. Partly in collaboration with Claudia Gerstner. SNS-Bericht 87-25. Universität Tübingen. Tübingen. URL: <http://amor.cms.hu-berlin.de/~h2816i3x/Publications/Krifka%201987%20Genericity.PDF> (cit. on pp. 2, 4, 8).
- (1995). “Common Nouns. A Contrastive Analysis of Chinese and English”. In: *The Generic Book*. Ed. by Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 398–411. ISBN: 9780226092928 (cit. on p. 4).
- Krifka, Manfred et al. (1995). “Genericity. An Introduction”. In: *The Generic Book*. Ed. by Gregory N. Carlson and Francis Jeffrey Pelletier. Chicago: University of Chicago Press, pp. 1–124. ISBN: 9780226092928 (cit. on pp. 4, 8, 26).
- Leslie, Sarah-Jane (2007). “Generics and the Structure of the Mind”. In: *Philosophical Perspectives* 21.1, pp. 375–403. ISSN: 15208583. DOI: 10.1111/j.1520-8583.2007.00138.x (cit. on pp. 2, 11–13, 19, 37, 38).

- Leslie, Sarah-Jane (2008). “Generics. Cognition and Acquisition”. In: *Philosophical Review* 117.1, pp. 1–47. ISSN: 00318108. DOI: 10.1215/00318108-2007-023 (cit. on pp. 2, 11–13, 16, 19, 21, 37, 38).
- (2012). “The Original Sin of Cognition. Fear, Prejudice and Generalization”. In: *The Journal of Philosophy*, forthcoming (cit. on pp. 11, 38).
- Leslie, Sarah-Jane and Susan A. Gelman (2012). “Quantified statements are recalled as generics. Evidence from preschool children and adults”. In: *Cognitive Psychology* 64.3, pp. 186–214. ISSN: 00100285. DOI: 10.1016/j.cogpsych.2011.12.001 (cit. on p. 11).
- Leslie, Sarah-Jane, Sangeet Khemlani, and Sam Glucksberg (2011). “Do all ducks lay eggs? The generic overgeneralization effect”. In: *Journal of Memory and Language* 65.1, pp. 15–31. ISSN: 0749596X. DOI: 10.1016/j.jml.2010.12.005 (cit. on p. 11).
- Lewis, David (1975). “Adverbs of quantification”. In: *Formal Semantics of Natural Language. Papers from a colloquium sponsored by the King’s College Research Centre, Cambridge*. Ed. by Edward L. Keenan. Cambridge: Cambridge University Press, pp. 3–15. ISBN: 0521206979 (cit. on p. 11).
- Liebman, David (2011). “Simple Generics”. In: *Noûs* 45.3, pp. 409–442. ISSN: 14680068. DOI: 10.1111/j.1468-0068.2010.00774.x (cit. on pp. 2, 4, 8, 12, 17–20, 26, 27, 32, 37).
- Prasada, Sandeep (2009). “Conceptual Representation and Some Forms of Genericity”. In: *Kinds, Things, and Stuff. Mass Terms and Generics*. Ed. by Francis Jeffrey Pelletier. New York: Oxford University Press. ISBN: 9780195382891. DOI: 10.1093/acprof:oso/9780195382891.003.0003 (cit. on p. 11).
- Schubert, Lenhart K. and Francis Jeffrey Pelletier (1987). “Problems in the Representation of the Logical Form of Generics, Plurals, and Mass Nouns”. In: *New Directions in Semantics*. Ed. by E. Lepore. London: Academic Press, pp. 385–451. ISBN: 9780124440401 (cit. on p. 2).
- Searle, John R. (1978). “Literal meaning”. In: *Erkenntnis* 13.1, pp. 207–224. ISSN: 01650106. DOI: 10.1007/BF00160894 (cit. on p. 18).
- Sennet, Adam (2011). “Ambiguity”. In: *The Stanford Encyclopedia of Philosophy*. Ed. by Edward N. Zalta. Summer 2011. URL: <http://plato.stanford.edu/archives/sum2011/entries/ambiguity/> Feb. 15, 2012 (cit. on p. 21).
- Smith, Martin (2010). “What Else Justification Could Be”. In: *Noûs* 44.1, pp. 10–31. ISSN: 14680068. DOI: 10.1111/j.1468-0068.2009.00729.x (cit. on p. 11).
- Sorensen, Roy (2012). “The sorites and the Generic Overgeneralization Effect”. In: *Analysis*. DOI: 10.1093/analysis/ans067 (cit. on p. 11).