Falsifying generic stereotypes

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Abstract

Generic stereotypes are generically formulated generalizations that express a stereotype, like "Mexican immigrants are rapists" and "Muslims are terrorists." Stereotypes like these are offensive and should not be asserted by anyone. Yet when someone does assert a sentence like this in a conversation, it is surprisingly difficult to successfully rebut it. The meaning of generic sentences is such that they can be true in several different ways. As a result, a speaker who is challenged after asserting a generic stereotype can often simply dismiss the objection and maintain that the stereotype is true in a way that is compatible with the challenger's objection. In this paper, a semantic theory for generics is presented that accounts for this type of defensive shifting in upholding generic stereotypes. This theory is then used to develop two strategies to object more efficiently. The first strategy is to immediately deny that either of the two possible ways in which a generic can be true obtains. The second strategy is to deny the satisfaction of an additional condition that is necessary for a generic sentence to be true.

1. Introduction

In 2015, then presidential candidate Donald Trump said in reference to Mexican immigrants that "They're bringing crime. They're rapists. And some, I assume, are good people."[1] When harmful stereotypes like these are broadcast to millions, the press is obligated to respond. Most newspapers aimed to do so by publishing a fact-check of the sentence "Mexican immigrants are rapists." Yet those who were tasked with checking the truth of this sentence faced a considerable challenge. After all, what exactly does this sentence mean and what evidence would suffice to determine its falsity?

[1] The majority of journalists interpreted 'they' as referring to Mexican immigrants. Trump himself later clarified that he intended to refer to *undocumented* Mexican immigrants. Here, I will stick to the formulation that most fact-checkers aimed to refute, according to which 'they' referred to all Mexican immigrants. See for example Lee (2015) in *The Washington Post*.

Upon reflection, this sentence clearly cannot be falsified by simply providing evidence of some counterexamples. A sentence with the form "*K*s are *F*" does not express a universal generalization and hence can be true even in the face of exceptions. The more innocuous sentence "Ravens are black," for instance, is true even though some ravens are, in fact, white. Trump himself recognized that there are exceptions to his stereotypical generalization since some Mexican immigrants – *he assumed* – are good people.

Generalizations of the form "*Ks* are *F*" are called *generics* because they characterize a kind without explicitly specifying how many members of the kind instantiate the generalized property. It is rather common for stereotypes to be formulated as generics. This is partly because something about the meaning of generic sentences makes them difficult to fact-check and falsify. Consider the following three examples of generic stereotypes, compared to three examples of explicitly quantified stereotypes:

1. Mexican immigrants are rapists.
2. Muslims are terrorists.
3. Black people are criminals.

4. All Mexican immigrants are rapists.
5. Most Muslims are terrorists.
6. Most Black people are criminals.

Each of these sentences expresses an offensive stereotype; that is, an offensive but common generalization about a social group.[2] Sentences (4-6) express explicitly quantified stereotypes. If someone were to assert one of these sentences in public, it would be clear upon what evidence a fact-checker could falsify it. This would also be the case if someone were to assert one of these sentences in a conversation and someone else would want to rebut the speaker. A successful rebuttal, as that term is used here, is a valid objection to a speaker's statement such that it would be inconsistent for that speaker to accept the truth of the premises of the objection without recognizing that the original statement was false. When a speaker asserts a stereotype like (4), for instance, a successful rebuttal could be formulated by providing just a single example of a Mexican immigrant that is not a rapist.

Generically formulated stereotypes like (1-3), however, are more difficult to falsify and rebut, even though they express generalizations that are equally, if not more, offensive than explicitly quantified

[2] Stereotypes are not defined here as being false nor as necessarily predicating a negative property. A stereotype, as the term is used here, is simply a widely held generalization about a social group. For some background on these definitional issues, see for example Whitley & Kite (2010).

stereotypes. Imagine trying to rebut someone's claim that "Mexican immigrants are rapists." This statement seems offensive partly because it conveys a broad generalization, based upon which one would seem justified in expecting any individual Mexican immigrant to be a rapist. Yet if one were to object to this statement by offering evidence that the majority of Mexican immigrants are of course not rapists, the speaker would still not be forced to acknowledge the falsity of their original claim. The speaker could simply accept the objection and maintain that the stereotype is nevertheless true, for instance based on the bigoted belief that something about the nature of Mexican immigrants causes some of them to be rapists, even if most suppress their true violent tendencies.

This defense would be grounded in racism and ignorance, yet the point is that the meaning of the claim "Mexican immigrants are rapists" appears to allow for such a response when the speaker is faced with the aforementioned objection. There are many generics that are true even though only a small minority of the kind instantiates the predicated property. For example, the sentence "Sharks attack bathers" is a true generic, even though few of them actually do. Similarly, the sentence "Sea turtles are long-lived" is true even though most sea turtles are killed shortly after hatching. Hence one cannot successfully rebut a generically formulated stereotype by pointing out that only a very small minority of the kind instantiates the negative property. The speaker could still maintain that the stereotype is true in the same way that generics like "Sharks attack bathers" are true (Leslie 2017).

Imagine, however, that one would have initially responded by denying a causal relation between being a Mexican immigrant and being a rapist. Part of what is conveyed in the statement "Mexican immigrants are rapists," is that a causal relation is at play, which is precisely why it such an offensive thing to say. Yet such a response would not constitute a successful rebuttal either, since the original speaker would be able to accept the objection while still maintaining that the stereotype is true. "Indeed," the speaker might respond, "being a Mexican immigrant does not *cause* one to be a rapist. Nevertheless, Mexican immigrants are rapists. After all, the Mexican government is actively sending their rapists across the US border."

Again, this reasoning would be based on ignorance, but the meaning of the generic stereotype is what allows for this type of defense. Many generic sentences are true even though no causal relation exists between the nature of the kind and the generalized property. "American barns are red" and "Bulldozers are yellow", for instance, are true generics, even though these colors are not caused by the nature of the kind. So when one objects to a generic stereotype by arguing against the suggested causal relation, the speaker can still respond by saying that the stereotype is nevertheless true in the same way that a generic like "American barns are red" is true.

It is no coincidence that stereotypes are often formulated as generics. Generic stereotypes are difficult to falsify and successfully rebut in a conversation. Their meaning appears to be 'slippery' in some way, allowing a speaker to continue to defend the truth of their stereotype in such a way that it remains unchallenged by the initial objection. This semantically sanctioned 'defensive shifting,' as it has been called, causes frustration when one aims to respond to generic stereotypes in a conversation (Langton et al. 2012). This paper presents a new semantic theory about generics that explains why the meaning of generic stereotypes is slippery and allows for this defensive shifting. The theory also naturally suggests two strategies for responding to generic stereotypes more efficiently, avoiding the possibility of defensive shifting. The first strategy takes the indeterminate meaning of generics into account by immediately denying both ways in which a generic can be true. The second strategy capitalizes on an additional necessary truth-condition for generics.

2. The first rebuttal strategy

2.1 No uniform truth-condition

To successfully respond to assertions of generic stereotypes, one must understand their truth-conditions. Unfortunately, all of the most promising semantic theories about generics can be met by counterexamples (Leslie 2007, 2008; Sterken 2015a, 2017). The difficulty in explicating the truth-conditions of generics stems from the sheer variety among true generics. Before we focus on the meaning of generic stereotypes, let us therefore look at a broader class of generic sentences. A semantic theory for bare plural generics of the form "*K*s are *F*" should be able to account for the truth of each of the following three types of generics:

Type 1 generics:

7. Sea turtles are long-lived.
8. Sharks attack bathers.

Type 2 generics:

9. American barns are red.
10. Bulldozers are yellow

Type 3 generics:

11. Ravens are black.
12. Birds can fly.

The difference between these three types of generics – so I will argue – lies in the type of relation that accounts for their truth. There is no single relation between a kind and property that grounds the truth of all three types of generics. As such, every semantic theory according to which all generic sentences express the existence of a single type of relation, faces systematic counterexamples. Some true generics will not be covered by the theory. To see this, let me briefly discuss two proposals on which generic sentences do have such uniform truth-conditions.

On Nickel's view, for instance, all generics say that there is a (contextually) suitable mechanism that explains *why* some members of the kind instantiate the generalized property (Nickel 2008, 2016).[3] Sentence (11), for example, would be true on this view, because a suitable evolutionary mechanism exists that explains the blackness of ravens. The mechanism that causes some albino ravens to be white, on the other hand, does not result in the truth of the generic "Ravens are white" because it is not a suitable evolutionary mechanism. Properly spelled out, Nickel's mechanistic-explanatory view is able to account for the truth of several generics, including (7-8) and (11-12) above.

Nevertheless, the existence of a suitable explanatory mechanism cannot be a *necessary* truth-condition for generics. Consider sentence (9) above. On Nickel's view, the truth of this generic is not based on the number of American barns that are red but rather on the mechanism responsible for the redness of (at least some) American barns. Such a mechanism does indeed exist; farmers in rural areas used to paint their barns with a mixture of linseed oil and the widely available ferric oxide (i.e. rust) to protect against fungi. However, if this is a suitable mechanism to ground the truth of (9), then "American barns are white" should be just as true. In areas where paint was available that made use of white lead instead of ferric oxide, barns were painted white. Given that both mechanisms are nearly identical and that the number of barns that are red or white cannot make any difference, both generics ought to be true. Yet "American barns are white" is not a true generic sentence. Instead, one seems to judge (9) as true based, at least partly, on the sheer number of American barns that are red. Similarly, (10) appears to be true based on the number of bulldozers that are yellow, rather than on there being a suitable

[3] Nickel's account is actually more complex. Although the mechanistic condition presented here is supposed to account for the truth of generics, it is not the semantic truth-condition of generics, strictly speaking. For Nickel, the semantic content of a generic of the form "*Ks* are *F*" is that there is a normal way for members of the kind to be with respect to a determinable of *F*, such that all members of the kind which are normal in that way instantiate *F*. A way of being normal, on Nickel's view, corresponds to a *contextually suitable mechanism* that explains why some members of the kind *K* instantiate *F*. Hence, ultimately, a generic is true if a contextually suitable mechanism exists that explains why some members of *K* instantiate *F* (Nickel 2008, 2016).

mechanism that explains why some bulldozers are yellow. So even though Nickel's mechanistic condition for generics provides an effective account of the truth of type 1 and type 3 generics, it cannot explain the truth of type 2 generics.[4]

A statistical condition would fare no better as a uniform truth-condition for generics. On Cohen's view, for instance, generics express probability statements about members of a kind (Cohen 1996, 1999). For a generic "*Ks* are *F*" to be true, the probability that an arbitrary member of *K* instantiates *F* must be higher than fifty percent. Sentence (11), for example, states that there is a greater than even chance that a randomly selected raven will be black, which is true. Cohen recognizes, furthermore, that the domain of the generalization expressed by a generic cannot just include all members of the kind. In that case, minority generics would always come out as false. Instead, he proposes that the domain of a generic generalization is restricted to those members of the kind who either instantiate the predicated property or a relevant alternative.[5] In some cases, this simply turns out to be the whole kind. Sentence (11), for instance, states that all ravens that have *some color* have a greater than even chance of being black. In the case of a generic like "Birds lay eggs," however, the domain is restricted to those birds that have *some way of extruding offspring* and the generic says that any one of these birds is likely to lay eggs. So this generic is true even though only a minority of all birds lay eggs, namely the adult females.

A probabilistic condition like Cohen's can account for the truth of type 2 generics, which are precisely those not covered by Nickel's mechanistic condition. On a probabilistic view, (9) is true due to the probability that an arbitrary American barn will be red rather than due to the mechanism responsible for this redness. Nevertheless, this probabilistic condition cannot constitute a *necessary* truth-condition for generics either, since it cannot account for the truth of type 1 generics.[6] Sentence (7) is true, for

[4] Furthermore, other generics are true even when no mechanism can explain why members of the kind instantiate the predicated property. This is the case for the statement that, for instance, "Up quarks have a spin of ½". There is no known mechanism that explains why fundamental particles have the basic properties that they do.

[5] Even with this addition, I am leaving out many important details. Here I can only mention that the domain of the generalization is not restricted to actual members of the kind, according to Cohen, but includes the members of the kind in uniform worlds, where these are worlds that "share the history of the actual world up to the reference time. But from this point on, no significant change occurs" (Cohen 2012, 76).

[6] To be clear, Cohen himself never claims that this probabilistic condition is a necessary one. He presents an additional 'relative' probabilistic condition for generics (Cohen 1996) and also argues that bare plural generics are structurally ambiguous between a probabilistic reading and a rules-and-regulations reading (Cohen 2001).

instance, even though it is unlikely for an arbitrary sea turtle to live a long time. Similarly, (8) is true even though most sharks never attack bathers.

It appears then that both Nickel's mechanistic condition and Cohen's probabilistic condition can account for the truth of type 3 generics, but that each fails to account for one of the other types. This is because – as will be explained further in the next section – generics do not express the existence of one specific relation.

2.2 Indeterminate meaning

The variety one finds among true generics is due to the fact that their meaning is indeterminate (i.e. unspecified, nonspecific, sense-general) *with respect to the type of generic relation that exists*.[7] There are two different generic relations based on which a generic sentence can be true. A generic sentence says that at least one of these relations exists between a kind and a property but leaves it unspecified which of them exists. Just like the sentence "I am visiting my aunt" does not specify whether I am visiting a sister of my mother or of my father, so generic sentences do not specify which generic relation exists. The following provides a first, incomplete, explication of the truth-condition of generics:

> *Truth-condition 1:* A generic of the form "*K*s are *F*" is true iff there exists at least one generic relation between *K* and *F*, where a generic relation can be a suitable statistical or causal-explanatory relation.

On this account, the generalization expressed by a generic sentence existentially quantifies over generic relations and is disjunctive in the sense that there are two different types of these generic relations, each of which would be sufficient for the generic to be true.[8] Hence a generic can be true based on a statistical relation, based on a causal-explanatory relation or based on both. In this sense, the meaning of generic sentences is indeterminate.

[7] Leslie (2007, 2008) has also defended truth-conditions for generics that can be considered indeterminate. Although broadly based on the same approach, the conditions presented in this paper are different from the ones that she defends.

[8] Elsewhere (REF. SUPRESSED) I have argued that generics can actually be true based on *three* different generic relations, including a functional-explanatory relation. Since this functional-explanatory relation is obviously not applicable to generic stereotypes like (1-3), I do not discuss this condition here. However, this functional relation would be relevant when aiming to falsify generic stereotypes like "Women are submissive" and "Boys don't cry" that can also be interpreted as true based on a functional relation between the kind and property. The two strategies outlined in this paper for responding to generic stereotypes can be easily extended to cover these types of stereotypes as well.

Before saying more about the statistical and causal-explanatory relation that can ground the truth of a generic, let me first point out two advantages of an indeterminacy theory about generics. This basic perspective on the meaning of generics allows one to account for both the variety of true generics and for the difficulty of efficiently rebutting a generic statement. Since generics can be true according to two different relations, one should expect that no uniform condition can account for the truth of all generics. Type 1 generics, for instance, are true, because a generic *causal-explanatory* relation exists between the kind and the property, whereas the type 2 generics are true based on the existence of a generic *statistical* relation. Type 3 generics, furthermore, are true based on the existence of both relations, even though one would have been sufficient.

The fact that the truth-conditions of generics are indeterminate with respect to which generic relation exists also explains why the meaning of a generic stereotype is 'slippery' and allows the speaker to make defensive shifts. When a speaker asserts a generic, they posit that at least one generic relation exists between a kind and a property, which can be either statistical or causal-explanatory. Hence when one objects by providing evidence that one of these relations does not exist, the speaker can simply accept the objection yet maintain the truth of the original assertion. A speaker who claims that "Muslims are terrorists," for example, has asserted the following:

> S: There exists at least one generic relation between the kind *Muslim* and the property *being a terrorist,* where a generic relation can be a suitable statistical or causal-explanatory relation.

If one were to object to this generically formulated stereotype by simply claiming that most Muslims are not terrorists, the original speaker could respond by maintaining that it is nevertheless true that "Muslims are terrorists." That is, the following response would be semantically sanctioned:

> S: Sure, most Muslims have not participated in a terrorist attack. Nevertheless, it is true that [at least one generic relation exists between the kind *Muslim* and the property *being a terrorist*.] After all, being a Muslim is what causes some of them to become terrorists, even if most Muslims never go that far.

In this case, the speaker defends the original generic stereotype – explicated between the brackets – by arguing that it is true in the same way that other type 1 generics are true; namely, based on a generic causal-explanatory relation between the kind and the property. More generally, someone who asserts a generic stereotype can always shift the defense to whichever of the two generic relations the interlocutor did not object. To state a generic stereotype is to assert that at least one of these two relations exists, which is why they are so difficult to rebut.

Note, however, that a theory according to which the truth-conditions of generics are indeterminate with respect to the type of generic relation that exists is not the only way one can account for both the variety of true generics and for the difficulty in rebutting them. Others have argued that generics are semantically ambiguous between different types of generalizations (Cohen 2001; Greenberg 2003), or that the generalization expressed by a generic is context-dependent (Nguyen 2019; Sterken 2015b). On these views, generic stereotypes would be difficult to respond to due to the fact that information about the speaker's context is required in order to determine which generalization she asserted in the first place, rather than due to the assertion having indeterminate meaning, as I have proposed. When challenged on a generic stereotype, the speaker would then be able to respond by saying that the interlocutor has misunderstood the meaning of their assertion, and then continue to defend the sentence that was stated based on a different available interpretation.

For the purposes of this paper, little depends on deciding which of these broader perspectives is correct.[9] Each provides an account of the semantically sanctioned defensive shifting in response to objections to a generic stereotype. To devise an efficient rebuttal strategy, it is more important to specify the relations based on which generics can be true, irrespective of the semantic mechanism by which there can be several of them. I trust that the two rebuttal strategies outlined below from the perspective of an indeterminacy account are also of interest to those who have defended one of these alternative views.

2.3 Two generic relations

Generics of the form "*Ks* are *F*" express that at least one of two relations exist between a kind and a property; namely a generic statistical or a causal-explanatory relation. In this section, the nature of these

[9] Elsewhere, however, I have argued that an indeterminacy theory is superior to a semantic ambiguity theory as well as to a contextualist theory (REF. SUPRESSED). For an initial argument against an ambiguity theory, consider that if generic stereotypes were semantically ambiguous, one would expect that a conjunction of two opposing generics could also be read in a non-contradictory manner. But, "Muslims are terrorists, though Muslims aren't terrorists" can only be read as contradictory (for a similar argument, see Sterken 2015b). For an initial argument against a contextualist view, consider that not all generalizations about Muslims are offensive. For instance, a generalization like "*Some* actual Muslims are terrorists" is not offensive. Yet, when asked the question, "What is a property that some actual Muslims have?" the response, "Muslims are terrorists" is *still* offensive. This is evidence for the fact that this response does not just express the generalization that "Some actual Muslims are terrorists." If the generalization expressed by a generic sentence were truly context-dependent, however, this answer-to-question context would seem to select precisely for this existential meaning of the sentence.

two relations is specified. Understanding the relations that can ground the truth of a generic sentence is important when aiming to successfully rebut generic stereotypes.

A generic statistical relation exists between a kind *K* and a property *F* when a majority of the members of *K* instantiate *F,* and when this is not just accidental. For this relation to exist, most members of the kind must instantiate the generalized property, even if the kind would have had other members. In this sense, the majority must be counterfactually robust and exist in all maximally similar worlds to ours; that is, in all worlds where everything remains the same except for that which is needed for members other than the actual ones to belong to the kind.[10] This requirement explains why generics have often been understood to express lawful generalizations (Krifka et al. 1995). Adding this first relation to our provisional truth-conditions, we can now be more precise in stating that:

> *Truth-condition 2:* A generic of the form "*K*s are *F*" is true iff there exists at least one generic relation between *K* and *F*, where this can be a statistical relation whereby a robust majority of *Ks* instantiate *F*, or a suitable causal-explanatory relation.

Generics of type 2 are only true based on the existence of this robust majority relation. Sentence (9) is true, for example, because a robust majority of American barns are red. When one judges this sentence to be true, this judgment is not only based on the belief that most American barns are red, but also on the belief that this majority is robust. Even though no generic explanatory relation exists between this kind and this property (as will explained below), the redness of American barns is not just accidental. If things had gone slightly differently such that American farmers would have built other barns than the actual ones, most of them would still have been red. People's belief in this counterfactual robustness of the majority explains why (9) is judged to be a true generic. The same point holds for (10).[11]

The second way in which a generic can be true is when a suitable *causal-explanatory* relation exists between a kind and a property. This relation exists between kind *K* and property *F* when in at least some cases where a *K* instantiates *F*, the defining property of *K* is an essential part of the *causal* explanation for the instantiation of *F*. In other words, whatever property (or set of properties) determines an individual's

[10] See Greenberg (2003) for a further development of this idea.

[11] This first majority condition is inspired by Cohen's probabilistic condition, which is outlined in the first section. Note, however, that there is no restriction to members of the kind who instantiate either the predicated property or an alternative. There is no need to introduce such a restriction to account for minority generics since minority generics are, instead, true by virtue of the second, explanatory, relation.

membership in *K*, this property must causally explain some cases of a *K* instantiating *F*.[12] Hence, whenever one judges a generic "*Ks* are *F*" as true based on this explanatory relation, one would also agree to the paraphrase that "some *Ks* that instantiate *F* do so by virtue of being a *K,*" even when one has no specific conception of the defining property of *K* that is causally responsible for *F*.[13]

The type 1 generics mentioned before are true based solely on this generic causal-explanatory relation. In the case of (7), for instance, a causal-explanatory relation exists between the kind *sea turtle* and the property *being long-lived.* When a sea turtle is long-lived, it is by virtue of being a sea turtle. If evolutionary species concepts are correct, a species is defined by the distinctive evolutionary history shared by its members. This evolutionary history is causally responsible for the fact that sea turtles tend to have slow metabolisms and slow growth processes, which are the very properties that are responsible for their long natural lifespan. Note that the defining property of the kind must not be directly responsible for the instantiation of the generalized property, since in this case the generalized property is attributable to the slow metabolisms and slow growth processes of turtles. Instead, the defining property of the kind must be an essential part of a complete causal explanation, as is the case here because the evolutionary history of sea turtles is what causes them to have slow metabolisms and slow growth processes in the first place.[14] The defining property of sea turtles is therefore essential when aiming to causally explain the long lifespan of some sea turtles.

The truth of type 2 generics is *not* based on this causal-explanatory relation, but only on a statistical relation. Although most American barns are red, for instance, the defining property of the kind is not *causally* responsible for this color itself. The defining property of the kind *American barn* is functional and hence does not cause anything. It is not accidental of course that so many American barns are red,

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[12] This causal-explanatory relation can be considered a specification of Nickel's condition as outlined in the first section. It is more specific in the sense that a *suitable* causal mechanism can only be one that is initiated by the defining property of the kind itself.

[13] For evidence that people judge "by virtue of" paraphrases apt for type 1 generics but less so for type 2 generics, see Prasada & Dillingham (2006). It is not, however, because one agrees to this paraphrase that one also judges a generic to be true based specifically on a *causal*-explanatory relation. Elsewhere (REF. SUPRESSED) I have argued that a generic can also be true based on a *functional*-explanatory relation, as in "Bus drivers transport passengers" or "Hearts pump blood." When a generic is judged to be true based on a functional-explanatory relation, one would also agree to an 'in virtue of' paraphrase.

[14] Being part of a complete causal explanation requires that the instantiation of the defining property be a causal difference-maker for the instantiation of the generalized property. It falls outside of the scope of this paper to commit to whether causal difference-making is a probabilistic, counterfactual or manipulationist notion.

but the mechanism by which barns are painted this color does not pertain to the defining property of the kind itself. Instead, the color of American barns is due to people's desire to have barns that weather the elements as well as to the availability of paint with ferric oxide. Type 3 generics, however, are true based on a generic causal-explanatory relation, as well as based on the statistical one.

There are two interesting facts to note about the generic causal-explanatory relation which can exist between a kind and a property. Firstly, when this causal-explanatory relation exists, one can often expect the statistical relation to exist as well. After all, the defining property of a kind is one instantiated by all members of that kind.[15] Nevertheless, even when the defining property of a kind is causally responsible for the generalized property, all members of the kind need not instantiate this property. Many circumstances can interfere with the mechanism initiated by the defining property of a kind, sometimes to the point that only a small minority of its members instantiates that property. In some cases, the external environment can inhibit the mechanism from working. The defining property of sea turtles causes some of them to live a long time, yet most of them are far less fortunate and are killed before they get the chance to experience the effect of their slow metabolisms and growth processes. In other cases, the background conditions for the mechanism to operate are only occasionally present, as in (8). When a shark attacks a bather, it is by virtue of the shark *being* a shark. Few of them, however, are ever in the right conditions to do so.[16] In still other cases, a defect inhibits the mechanism from operating. Although (2) is true based both on the statistical and the explanatory relation, not all ravens are black. By virtue of being ravens, most of them have a set of genes that produce a black color. Yet, a defect in just one of these genes can result in a white albino raven. Still, the generic is true based on both generic relations.

A second interesting point to note about the generic causal-explanatory relation is that often when this relation is instantiated, one can also expect the generalized property to be specific to the kind. After all, the defining property of a kind is distinctive. Nevertheless, even when the defining property of a kind is causally responsible for the generalized property, this generalized property is not necessarily also

[15] Matters are more complex, of course, since what I call 'defining properties' can also be sets or clusters of properties.

[16] If one disagrees with this generic, it is presumably because one believes that it is not sharks' nature that causes them to attack bathers, but rather the fact that they sometimes mistake bathers for their natural prey. The truth-conditions for generics presented here explain why this would lead one to consider the generic to be false.

distinctive of the kind.[17] Again, there are many possible reasons for this. For one, different causes can have similar effects. Ravens have wings, for instance, but so do bats; and yet, in both cases this is by virtue of the defining property of the kind. A second reason is that for many kinds, the 'defining property' is actually a complex property or a combination of properties. In that case, that part of the defining property of the kind which is causally responsible for the generalized property may very well be shared by other kinds. "Ravens have wings" is true, for example, but birds of other species have wings just as well. In fact, the more general claim that "Birds have wings" is also true and perhaps more apt as an explanatory generic. After all, generality is an explanatory virtue, though not a requirement (Strevens 2008). As a sub-kind of birds, ravens share part of their defining property with other birds. It is precisely this shared part of their complex defining property that is responsible for their wings, and hence having wings is not distinctive of their species. In this same way, the statement "Copper is a good conductor of heat" is true based on a generic explanatory relation, though the more general statement "Metals are excellent conductors of heat" is also true.

Now that we understand the two relations based on which a generic can be true, we also understand their truth-conditions. The truth-conditions of generics can be stated (still incompletely) as follows:

> *Truth-condition 3:* A generic of the form "*K*s are *F*" is true iff there exists at least one generic relation between *K* and *F*, where this can be a statistical relation whereby a robust majority of *Ks* instantiates *F*, or a causal-explanatory relation whereby the defining property of *K* causally explains some *K*'s instantiation of *F*.

2.4 Denying both generic relations

Having explicated the truth-conditions of generics, we can now turn back to generically formulated stereotypes and also be more precise about their meaning. When one asserts (1), the speaker has claimed that at least one of the following two relations exists: a robust majority of Mexican immigrants are rapists or in at least some cases where a Mexican immigrant is a rapist, the defining property of their

[17] The distinctiveness of a property is also not sufficient for a generic to be true on the current account. Elsewhere, Cohen (1996) argued that a generic can be true based on the fact that the predicated property *is relatively more likely* to be instantiated by members of the kind than by members of an alternative kind. Leslie (2007) has already shown, convincingly to my mind, that this relative condition is too weak and would over-generate true generics, like "Humans are blind" or "Humans are one-legged." The causal condition presented here is stricter than Cohen's relative condition and hence would rule out examples like these. However, it does capture the intuition that a property being distinctive of a kind often coincides with the truth of a generic.

kind is causally responsible. Similarly, when someone asserts (2), the speaker has claimed that a robust majority of Muslims are terrorists or that some Muslims are terrorists by virtue of being Muslims.

Given their indeterminacy with respect to which type of generic relation exists, responding to a generic stereotype by denying the existence of just one of the generic relations does not constitute a successful rebuttal. A more adequate response would be to immediately deny the existence of both generic relations. That might go as follows:

S: Muslims are terrorists.

I: No, it's not true that Muslims are terrorists. It is not the case that a robust majority of Muslims are terrorists. And though some of them are, this is not by virtue of their being a Muslim. The nature of what it is to be a Muslim does not cause anyone to become a terrorist.[18]

This response constitutes a successful rebuttal of the speaker's stereotype since it would be inconsistent of the speaker to accept the premises of the objection yet continue to maintain that the original assertion was true. The objection would be even more convincing, however, if the interlocutor had also provided evidence that neither of the two generic relations exists. To deny the existence of the generic majority relation, one can either provide evidence that only a minority of the kind instantiates the predicated property, or that a majority does exist but only accidentally. To deny the existence of the causal-explanatory relation, one must argue that the defining property of the kind does not causally explain the instantiation of the generalized property. One way of doing so would be to provide evidence of alternative causal factors that suffice to explain each of the cases where a member of the kind instantiates the generalized property. Another way of doing so would be to argue that if the defining property of the kind had been part of the causal explanation, one would expect the generalized property to be more widespread among members of the kind or more distinctive of the kind. Hence a stronger rebuttal of (2) would have been something like this:

S: Muslims are terrorists.

I: No, that's not true. Very few Muslims ever actually commit terrorist attacks and PEW research further shows that there is very little support among Muslims for terrorist organizations.[19] So even in those cases where a Muslim does commit a terrorist attack, it is not by virtue of being a

[18] The fact that this rebuttal appears successful is itself an additional argument in favor of the truth-conditions for generics presented above. In this way the rebuttal data are theoretically useful in eliciting further intuitions about the truth-conditions of generics (thanks to an anonymous referee for pointing this out).

[19] See for example Poushter (2015) and Wike (2015).

Muslim. After all, if the religious beliefs that define what it is to be a Muslim would be causally responsible for their turn to terrorism, one would expect many more Muslims to at least agree with such actions.

Of course, the original speaker may disagree with this argument and continue the conversation by objecting to it. The point of this example, however, is to show that the speaker cannot just *accept* the objection and continue to uphold the truth of the original stereotype. Based on this successful rebuttal, the original speaker is forced to address the arguments themselves, rather than shift to defending the original statement in a way unaddressed by the objection. A similar objection to (1) which aims to deny both generic relations could go like this:

S: Mexican immigrants are rapists.

I: No, that's not true. There is nothing about the nature of Mexican immigrants that leads some of them to become rapists. If this had been the case, one would expect Mexican immigrants to be more likely to be rapists than members of the native-born population, but that is not the case. As Arellano of *Politico magazine* has put it: 'whites accounted for 71 percent of all sexual assaults documented (above their total percentage of 63 percent of the U.S. population), while Latinos accounted for 9 percent, far below *their* total percentage of 17 percent.'[20] These same data also show that obviously, most Mexican immigrants are peaceful citizens and never assault anyone.

The rebuttal strategy used here immediately denies both ways in which the stereotype can be true, resulting in a successful rebuttal. The original speaker cannot rationally brush aside the objection and continue to uphold the truth of the stereotype. There is simply no option for defending the stereotype by shifting to an alternative reading since the two generic relations that could ground the truth of the stereotype have been denied. While this first strategy can successfully falsify generic stereotypes, it would also require an elaborate response from the speaker, especially if one aims to submit even more conclusive evidence that no generic explanatory relation exists. There is also another strategy, however, that would result in a successful rebuttal of a generic stereotype and that often requires a less elaborate response. This strategy is the subject of the second part of the paper.

[20] See Arellano, G. (2015). For similar response to Trump's statement, see Lee (2015) in *The Washington Post*, Holpuch (2015) in *The Guardian*, Lawler (2015) in *The Telegraph*, and *The Economist* (2015).

3. The second rebuttal strategy

3.1 An additional condition

The truth-condition for generic sentences provided in *truth-condition 3* is still incomplete. Some generics are false even though they satisfy this condition. This section introduces an additional condition that generics must satisfy in order to be true. As it stands, *truth-condition 3* would wrongly predict the following sentences to be true:

13. Bees are sexually sterile.
14. People in East Asia speak Chinese.
15. Humans are right-handed.
16. Sea turtles are short-lived.

In each of these sentences, a robust majority of the kind instantiates the generalized property. Still, these sentences are false. Other philosophers have already proposed several truth-conditional constraints on generics that ought to explain why sentences like (13-16) are untrue. Cohen (1996), for instance, proposes that generics can only be true if they also satisfy a *homogeneity* constraint. For a generic to be true, the probabilistic condition that any member has a higher than even chance of instantiating the predicated property must hold for every salient partition of the kind. Sentence (13), for example, would be false due to the salience of partitioning bees into workers, drones and queens. Since both drones and queens have a low chance of being sexually sterile, (13) is predicted to be false. In the case of (14), perhaps the salience of different nationalities would explain why it strikes us as false.

This homogeneity constraint fails, however, to explain why (15) and (16) are false. There is no salient partitioning of humans or sea turtles such that in one of these partitions the generalized property is in the minority. Of course, one can always partition a kind into those that instantiate the generalized property and those that do not, but this would make any generic with exceptions false. Furthermore, as Leslie (2007) has already objected, if the salience of gender as a partitioning explains why (13) is false, then generics like “Bees reproduce” would not be true either.

In response, Leslie (2007, 2008) has offered an alternative constraint. She proposes that a generic is false whenever the exceptions to the generalization instantiate an equally positive alternative. Even though generics allow for exceptions, this is only the case if the counter-instances simply fail to have the generalized property rather than have an equally salient alternative. Sentence (15) would be false, for example, due to the fact that humans who are not right-handed instantiate an equally positive alternative property, namely being left-handed.

Yet this constraint cannot be entirely correct either. After all, it is true that "American barns are red" even though some barns are white, which is an equally positive alternative. Furthermore, if the claim "Sea turtles are short-lived" were false because the exceptions instantiate an equally positive alternative, then "Sea turtles are long-lived" ought to strike us as false as well.

Instead, I argue that the constraint that explains the falsehood of sentences like (13-16) is the following: For a generic of the form "*Ks* are *F*" to be true, it *cannot* be the case that the defining property of *K* is causally responsible for some *K*'s instantiation of an incompatible alternative to *F*. In other words, if some members of *K* instantiate an incompatible alternative determinate of the same determinable as *F*, the generic "*Ks* are *F*" can only be true when this alternative property is *not* caused by the defining property of *K.*

Take sentence (15) as a first example. The alternative to being right-handed is being left-handed since these are two alternative determinates of the same determinable: handedness. They are also incompatible alternatives since being right-handed and being-left handed exclude each other.[21] Nevertheless, that some people are left-handed is caused by the defining property of the kind. Human nature causes some people to be right-handed and others to be left-handed. As a result, (15) strikes us as being false. Even though most human beings are right-handed, it is simply not true that "Humans are right-handed", because some peoples' being left-handed is also caused by their being human.[22] A generic cannot be true when an incompatible alternative to the generalized property is caused by the defining property of the kind.

This same constraint explains why the other sentences in (13-16) are false.[23] The defining property of bees is causally responsible for many bees being sexually sterile, but also for other bees being fertile.

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[21] Thus, this additional constraint does not cause "Frenchmen eat horsemeat" to be false. This generic is true based on a generic causal-explanatory relation. And, although being French might also cause French people to eat other specific things, these do not constitute incompatible alternatives.

[22] As has been hypothesized, it is because humans are a competitive species that being left-handed confers some evolutionary fitness. Because humans are also cooperative, however, it also pays for the majority to be right-handed.

[23] It also explains why other generic sentences like "Books are paperbacks" or "Mammals are placental mammals" are infelicitous. To determine whether the constraint outlined in this section is satisfied for a generic of the form "*Ks* are *F*," one must determine whether the defining property of *K* is causally responsible for *F*. When *F* is a *sub-kind* of *K*, however, this requires one to determine whether the kind-identifying property of *K* is causally responsible for a *specification* of that very property. This cannot be determined and hence generics that predicate sub-kinds are semantically uninterpretable. For what I believe is a similar view, see Nickel (2018).

Hence (13) is false. Furthermore, sentence (14) is false, because the defining property of *people in East Asia* causes some of them to speak Chinese, but causes other people of East Asia to speak a different language.[24] Finally, (16) is false because while most sea turtles are short-lived, it is the alternative to this property that is explained by the defining property of the kind.

The additional constraint which I propose here is more specific than that of Leslie (2007, 2008). Recall that on Leslie's account, a generic can only be true if the exceptions to the generalization simply lack the generalized property, rather than that they instantiate an equally positive alternative. Instead, I have proposed that what really matters is whether any of the alternatives is causally explained by the defining property of the kind. This proposal also accounts for the correct intuition behind Leslie's view. After all, simply lacking a property cannot be causally explained. *Not* instantiating a property is a non-event and as such cannot have a causal explanation (Strevens 2008). Only an actual instantiation of a property can be causally explained, and hence can result in a generic being false based on the additional constraint.[25]

The constraint which I have proposed here also accounts for the intuition behind Cohen's homogeneity condition. For Cohen, a generic can only be true if the kind is homogenous with respect to the high probability of the instantiation of the generalized property. On the current proposal, the lack of homogeneity itself is not responsible for a false generic. A lack of homogeneity, however, can be evidence to the fact that the defining property of the kind is not only causally responsible for the production of the generalized property, but also for that of alternative properties. Hence (13) is not just false because bees are not homogenously sexually sterile. Instead, it is false because bees' shared nature is causally responsible for the fact that worker bees are sterile but also for the fact that drones and queens are fertile.

So when a generic sentence is true, this is not only based on satisfying the truth-condition which has been provided above. The additional constraint must also be satisfied. With this constraint explained, we can now state the truth-condition of generics in full:

[24] Though speaking different languages is in principle not incompatible, it is *de facto* often incompatible. I believe this belief in the *de facto* exclusiveness of languages explains why (14) is judged to be false.

[25] Hence, generics like "Lions give birth to live young" are true based on a generic causal relation and satisfy the additional constraint. Even though male lions do not give birth at all, *not* giving birth to live young is not a property that can be causally explained by the nature of the kind.

Truth-condition 4: A generic of the form "*K*s are *F*" is true iff:

- there exists at least one generic relation between *K* and *F*, where this can be a statistical relation whereby a robust majority of *Ks* instantiates *F*, or a causal-explanatory relation whereby the defining property of *K* causally explains some *K*'s instantiation of *F*,
- and the defining property of *K* does *not* causally explain some *K*'s instantiation of an incompatible alternative to *F*.

3.2 Denying the additional condition

The additional condition described in the previous section can result in the falsity of a generic even when it satisfies the first condition. Hence a second strategy for rebutting generic stereotypes is to focus on this additional condition and deny its satisfaction. Consider stereotype (2) again, repeated here:

2. Muslims are terrorists.

Given the conditions provided in *truth-condition 4*, we can now be more precise about what someone asserts by stating (2). The speaker has claimed two things. Firstly, they have claimed that at least one of the following relations holds; most Muslims are terrorists, or in some cases where a Muslim is a terrorist, it is by virtue of their being a Muslim. Secondly, they have claimed that being a Muslim is *not* causally responsible for some Muslims instantiating an incompatible alternative to being a terrorist. Hence in addition to denying the first condition, the following would also constitute a successful rebuttal:

S: Muslims are terrorists.

I: That's not true. Islam is a religion of peace and hence being a Muslim actually causes people to be peace-loving, not terrorists.[26]

It would be inconsistent for the original speaker to accept the claim that being a Muslim causes people to be peace-loving citizens, while still maintaining the truth of the original stereotype. The interlocutor here has made a claim about the defining property of *being a Muslim* and has claimed that this kind is causally responsible for an incompatible alternative to *being a terrorist*. The interlocutor has thereby argued that the generic stereotype is false in the same way that "Sea turtles are short-lived" is

[26] A response like this does accept, however, that the kind has a causal defining property. In some cases, as with stereotypes about race or gender, one may want to avoid this approach and hence only apply the first strategy.

false; it is only an alternative to the generalized property which is causally explained by the defining property of the kind.

A different response based on the same additional condition would be to argue that the generic is false in the way that "Bees are sterile" is false. In that case, one would argue that both the generalized property *and* an alternative can be explained by the defining property of the kind, since this property results in different effects in different circumstances. Here is an example:

S: Muslims are terrorists.

I: That's not true. The religious beliefs that define what it is to be a Muslim are perhaps part of the explanation for the fact that some Muslims turn to terrorism, but are equally part of the explanation for the fact that so many Muslims live a peaceful life. Whether these beliefs result in someone being a terrorist or a peace-loving citizen depends on personal, social and political background conditions.

This response also provides a successful rebuttal to the original speaker and avoids any defensive shifting. The speaker must address the objection since if it is indeed the defining property of being a Muslim that is causally responsible for the fact that many of them are peace-loving citizens, then "Muslims are terrorists" cannot but be false. This same approach of denying the defeating condition can be taken as a response to a generic like (1). Consider a final example:

S: Mexican immigrants are rapists.

I: No, that's not true. In fact, being a Mexican immigrant often *causes* people to abide by the law, which is why the data show that Mexican immigrants are relatively less likely to commit violent crimes compared to the native population. As Marc Rosenblum from the Migration Policy Institute said: 'Immigrants in general — unauthorized immigrants in particular — are a self-selected group who generally come to the U.S. to work. And once they're here, most of them want to keep their nose down and do their business.'[27]

4. Conclusion

Generic stereotypes like "Muslims are terrorists" and "Mexican immigrants are rapists" are offensive and hurtful. Although explicitly quantified stereotypes can also be offensive, it is no coincidence that stereotypes are often formulated as generics. Due to its indeterminacy with respect to

[27] As quoted in Lee (2015). For data on violent crimes and a comparison of immigrants versus the native-born population, see for example Spenkuch (2013).

which type of generic relation exists, the meaning of a generic stereotype is 'slippery' and allows for defensive shifting when one aims to rebut the stereotype. As many generic stereotypes are both offensive and hard to rebut, they are also particularly pernicious (Langton et al. 2012).

In this paper, I have first considered a broader selection of generics in order to explicate their truth-conditions. Based on these truth-conditions, two different strategies were proposed that one can use in responding to generic stereotypes. A first strategy is to argue that neither of the two generic relations exists between the kind and the property. A second strategy is to deny that the additional necessary condition is satisfied, namely by arguing that the nature of the kind is causally responsible for an incompatible alternative. The hope is that understanding both of these strategies empowers readers to confidently respond to utterances of generic stereotypes and inspires fact-checkers to not let public statements of generic stereotypes go unchallenged.

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