EXCEPTIONS TO GENERICS: WHERE VAGUENESS, CONTEXT DEPENDENCE AND MODALITY INTERACT

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0. Introduction

This paper deals with two well known puzzles in the analysis of generic sentences as in (1), which are usually discussed separately, and makes the novel claim that a proper understanding of one of these puzzles can lead to a better understanding of the other one:

(1) a. A dog has four legs
   b. Dogs have four legs

The first puzzle has to do with the well known fact that, although sentences as in (1) express generalizations, and are usually represented as headed by a generic operator with universal force, they also tolerate exceptions. E.g. unlike “Every dog has four legs”, both (1a) and (1b) are considered true although there are clear cases of three legged dogs.

The second puzzle is that while both minimally contrasting generics with indefinite singular and bare plural subjects as in (1a) and (1b), respectively (IS and BP sentences, henceforth) express generalizations, support counterfactuals and tolerate exceptions, there are also reported differences between them. Examples of these are the “definitional” nature of the IS generics vs. the weaker “inductive” nature of the BP ones (noted in Lawler 1973, Burton Roberts 1977), and the felicity differences seen in e.g. (2), (from Burton Roberts and Lawler), and (3)-(4) (from Greenberg 2003). The puzzle, then, is how to capture simultaneously both the similarities and differences between the two types of generics:

(2) a. #A madrigal is popular / #A room is square / #A man is blond
    b. Madrigals are popular / Rooms are square / Men are blond

(3) a. #A Norwegian student with a name ending with “s” wears thick green socks (odd as generic, fine as existential)
    b. Norwegian students with names ending with “s” wear thick green socks.
In this paper I discuss a novel observation which connects these two puzzles, namely the fact that although both IS and BP generics tolerate exceptional and contextually irrelevant entities in a strikingly similar way, the ability to specify the properties of the exceptions to BP generics like (2b)-(4b) (namely those with infelicitous IS counterparts) is much lower than the ability to specify the properties of the exceptions to IS generics. The main claim I make is that both this difference, as well as the felicity differences seen in (2)-(4) are a result of an underlying contrast in the kind of modality that IS and BP generics can express, argued for in Greenberg (2003). To capture the newly observed difference the exceptions tolerance mechanism for both IS and BP generics is defined as a restriction on the set of individuals and situations quantified over by Gen, which is systematically sensitive to the kind of modality of the sentence, namely to the restriction over worlds quantified over, and which is vague to two different degrees, using supervaluationist methods.

The paper is structured as follows: Section 1 examines traditional as well as novel similarities in the way IS and BP generics tolerate exceptional and contextually irrelevant individuals and situations. Section 2 deals with the newly observed contrast in the way IS and a subclass of BP generics tolerate exceptions, which indicates that the similarity in the exceptions tolerance mechanism cannot be total. Section 3 develops an informal explanation of the contrast, based on Greenberg’s (2003) theory of the two types of modalities that IS and BP generics can express. In Section 4 the intuitions and observations developed in the previous sections are integrated into a unified tolerance mechanism for IS and BP generics, namely a restriction on the domain of individual (and situations) which is sensitive to the difference in modality, and which is vague to two different degrees, using a modified version of Kadmon & Landman’s (1993) proposal for domain vague restriction for generics. Section 5 concludes the paper and examines the advantages of the proposal over other exceptions tolerance proposals.

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1 Preliminary versions of parts of this claim appear in Greenberg 2003, and 2004.
1. Tolerance of entities by IS and BP generics: The similarities

In addition to the well known observation, mentioned above, that IS and BP generics tolerate *exceptional individuals*, another observation about both types of generics is that these legitimate exceptions are those which are considered abnormal or “nonstandard” in some sense. The observation is common in the genericity literature (see e.g. Delgrande 1987, 1988, Krifka et al 1995, Krifka 1995, Asher & Morreau 1995, Pelletier & Asher 1997, Drewery 1997 and Eckardt 1999), but, as I will show below, current attempts to capture it precisely face problems. I will call this “the abnormality constraint” on the exceptions to generics, and formulate it like this: An individual which is considered a legitimate exception to a generic sentence is a one which, in addition to not having the VP property is assumed to be exceptional, nonstandard or abnormal in some other respect. For example, legitimate exceptions to (1), are dogs that in addition to not having four legs are those with mutations, those that have undergone an accident, etc.

A much less common observation about IS and BP generics is that both can tolerate not only exceptional, but also *contextually irrelevant*, individuals. The traditional view about generics (e.g. Dahl 1975, Krifka 1987, Krifka et al 1995, Condoravdi 1997), supported by contrasts as in (5), is that unlike sentences with explicit quantifiers like “every”, generics *cannot* be contextually restricted:

(5)  (Context: There are lions and tigers in this cage)
   a. Every lion is dangerous (*Can* mean “Every lion in this cage is dangerous”)
   b. Lions are dangerous (*Cannot* mean “Lions in this cage are dangerous”)

But there are many other generics which *can* be contextually restricted, e.g. (6)-(8):

(6)  (There are professors and students in this university) A professor wears a tie
     / Professors wear a tie. (*Can* mean “A professor / Professors in this university”)
(7) (There are books and periodicals in this library.) Books / A book can be borrowed for a week, but periodicals / A periodical can only be borrowed for one day. (*Can* mean: “A book / Books in this library”)

(8) (There are very cheap clothes in Jack’s shop!) A shirt costs only $10 / Shirts cost only $10. (*Can* mean “A shirt / Shirts in this shop”)

Both IS and BP generics, then, can tolerate contextually irrelevant individuals, as well.²

The distinction between exceptional and contextually irrelevant individuals is not always clear in the genericity literature, but in this paper I will keep emphasize its importance. One reason for that is that the abnormality constraint applies only to the former, and not to the latter type of individuals. For example, in evaluating the IS and BP generics in (7), books in other libraries (i.e. contextually irrelevant ones) are clearly not considered abnormal – these are simply not talked about in the first place. In contrast, legitimate exceptions to (7) are books in this library which are taken as abnormal or nonstandard, e.g. damaged, rare or highly requested books. The same distinction is found with other IS and BP generics (e.g. (6) and (7)).

As is well known (see e.g. Chierchia 1995), a subclass of IS and BP generics, namely those with stage level predicates, tolerate also contextually irrelevant situations. Notice that unlike the tolerance of contextually irrelevant individuals, which is usually dependent on the utterance context, the information about irrelevant situations is contributed also by presuppositions, implicatures or real world knowledge of the VP as well (see e.g. Schubert & Pelletier 1988, Chierchia 1995, Carlson 1999, and Cohen 1996 for discussion). For example, without knowing the utterance context for (9) (e.g. talking about this school, or this country) we cannot say anything about which individual first graders are contextually relevant and which are not.

² Condoravdi 1997 admits that some cases of contextual restriction in generics exist, as in “People in this university dress formally. Professors wear a tie” (p.113), but claims that this is possible only in modal subordination cases, i.e. when “the restricting set of variables is itself within the scope of a generic operator” (p.113). Notice however, that in (6)-(8) the ‘context sentences’ are nongeneric. Moreover, in (i), where the context sentence is clearly extensional the generic can be still understood as restricted to the books and periodicals in this library:

(i) This library holds 11,800 books, and 578 periodicals. Books / A book can be borrowed for one weeks only, but periodicals / a periodical can only be borrowed overnight.
(9) A first grader finishes school at 13.00 / First graders finish school at 13.00

However, even in this null context we can say something about which situations are contextually irrelevant in (9), namely nonschool days situations, since finishing school presupposes going to school. Similarly, even without knowing what the utterance context of (10) is, we easily exclude situations where the computer is off as irrelevant, because working quickly presupposes working:

(10) A Pentium computer works quickly / Pentium computers work quickly

The presuppositions and implicatures of the VP, or the real world knowledge about it, limit the choice of contextually (ir)relevant situations, and the utterance context (e.g. talking about what first graders do on Wednesdays) can further specify it\(^3\), \(^4\).

In addition to contextually irrelevant situations both IS and BP generics with stage level predicates tolerate also exceptional situations. Similar to the tolerance of exceptional individuals, discussed above, these are situations which are considered abnormal or less standard. In interpreting (9), for example, these can be extremely stormy days situations, or those where the prime minister comes to visit school. And in interpreting (10), these can be situations where it is extremely hot, or where the computer is placed near a strong magnet.

We saw that the abnormality constraint applies only to exceptional, and not to contextually irrelevant entities. But there is another difference, so far unnoted, between exceptional and irrelevant entities, found with both IS and BP generics. The difference is illustrated in the listener’s reactions to (6) repeated here as (11), in the table in (12):

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\(^3\) This characteristic of contextually irrelevant situations is found not only with IS and BP generics but also with habituals with proper name subjects. Our real world knowledge tells us that people usually (though not necessarily!) snore when they are asleep, so the salient reading of “John snores” is roughly ‘Whenever John is asleep, he snores’ (although other readings, e.g. “Whenever John is nervous he snores” are also possible in specific contexts). Similarly, the salient reading of “John reads the Journal of Semantics” is not “Whenever John reads, he reads JOS”, nor “Whenever John reads a journal, he reads JOS” (although these readings are possible in certain contexts), because we know that usually people do not spend their whole reading time reading only a journal, and that usually if people read journals, they read more than one. Instead more plausible readings are “Whenever a new issue of JOS is out, John reads it”, “Whenever John wants to read an interesting paper, he reads JOS”, “Whenever John is in the departmental library, he reads JOS”, etc.

\(^4\) But notice that sometimes presuppositional information about the VP can give us information about contextually irrelevant individuals as well. For example, in considering “Snakes lay eggs”, male individual snakes are considered irrelevant because the VP (“lay eggs”) presupposes giving birth, which is only relevant of females (see e.g. Carlson 1999).
(11) (Context: There are professors and students in this university)

Professors wear a tie / A professor wears a tie

(12)

<table>
<thead>
<tr>
<th>Listener’s reaction: the following is a counterexample to the generalization:</th>
<th>Speaker’s evaluation of listener’s reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. But look at John (a professor from another university) - He does not wear a tie!</td>
<td>Oops! The listener has misunderstood something.</td>
</tr>
<tr>
<td>b. But look at Bill (a professor from this university) – He does not wear a tie!</td>
<td>Legitimate reaction (but I don’t (necessarily) agree - he is not really a normal or standard professor)</td>
</tr>
<tr>
<td>c. But look at this situation (where Bill is in the shower) – Bill is not wearing a tie now!</td>
<td>Oops! The listener has misunderstood something</td>
</tr>
<tr>
<td>d. But look at this situation (where Bill is walking in the university’s campus) – Bill is not wearing a tie now!</td>
<td>Legitimate reaction (but I don’t (necessarily) agree - this is not really a normal or standard situation)</td>
</tr>
</tbody>
</table>

The difference between (12a,b) shows us that taking an irrelevant, but not an exceptional individual, as a counterexample to the generalization is evaluated as a misunderstanding. The contrast between (12c,d) shows us that exactly the same holds for irrelevant and exceptional situations. Crucially, even if I, as the speaker of (11), think that Bill is an exceptional (abnormal) professor and that this legitimizes his not wearing a tie, or that this is an abnormal situation (e.g. extremely hot) and that this legitimizes Bill not wearing a tie now, the fact that my listener still takes these entities to falsify my generalization (i.e. as illegitimate exceptions) is not interpreted as a misunderstanding on his or her side, but rather as a legitimate reaction (although I can still disagree with this reaction).

I will take the reactions of “misunderstanding” in (12a,c) to indicate the listener has failed to accommodate something in what the speaker had in mind, namely the domain restriction. This is very similar to what we feel about B’s reaction to A’s explicitly quantified statement in (13) in context of talking about this class:

(13) a. No student got less than 85
    b. #You’re wrong! Bill (a student who doesn’t take this course) got 83!
The legitimacy of the listener’s reaction in (12b,d) indicates that, unlike the properties of the contextually relevant entities, the properties of exceptional entities are not required to be accommodated by the listener in the first place. In section 4.1.2 below I will show that this observation strongly supports Kadmon & Landman’s (1993) approach to Gen as a “domain vague” quantifier. In section 5 below I will show that it poses a problem for attempts to define Gen as weaker than universal (e.g. similar to “most”).

To summarize so far, we have seen that IS and BP generics tolerate entities in a strikingly similar way: Both can tolerate four types of entities (contextually irrelevant and exceptional individuals, and contextually irrelevant and exceptional situations). In both the information about irrelevant individuals comes from the utterance context, whereas the one about irrelevant situations comes also from presuppositions, implicatures, etc. about the VP. And in both, contextually irrelevant entities differ from exceptional entities in two ways (the presence / absence of the abnormality constraint and the (un)necessary accommodation of properties). These similarities should be captured in any theory of IS and BP generics, and they strongly indicate that the two types of generics have the same basic tolerance mechanism.

In the next section, however, I look at data indicating that the similarity with respect to tolerance of exceptional entities is not total.

2. Tolerance of entities by IS and BP generics – the difference

2.1 Cases where mere abnormality is not enough....

Above we talked about the abnormality constraint, according to which the legitimate exceptions to generics are those considered abnormal. A fact which is much less noted, however, is that in many cases merely being abnormal is not enough to be considered a legitimate exception. Clearly not any abnormal or nonstandard dog will be considered a legitimate exception to (1), repeated here as (14). In fact, language users can quite easily divide potential abnormal dogs to those which will, and those which will not be easily considered exceptions to (14), as in (14a) and (14b), respectively:

(14) A dog has four legs / Dogs have four legs
a. Dogs with a mutation, dogs which have undergone an accident, masochistic dogs (which enjoy damaging their body), dogs participating in some cruel scientific experiments…..

b. Dogs with five names, infertile dogs, dogs that can read and write, dogs with vocal cords problems, dogs whose mother won a national medal…

Similarly, with (15) the individuals in (a), but not the ones in (b) are naturally considered legitimate exceptions the generalization, although both can be thought of as “nonstandard” or abnormal children. As (16) shows, such distinctions can be easily made with respect to abnormal situations as well:

(15) Children learn to read at age six / A child learns to read at age six
   a. A child with learning disabilities
   b. A child who has five names ending with “t”.

(16) A Pentium VI computer works very quickly / Pentium VI computers work very quickly
   a. Situations where the computer has to process an exceptionally heavy file.
   b. Situations where the computer is located in a purple room.

Notice that although the difference between the (a) and the (b) examples is rather strong, it is possible to imagine special contexts where entities in (b) are considered legitimate exceptions, e.g. in (15) cases where children with five names ending with “t” are those from royal families, which are traditionally taught reading and writing at age 4. Crucially, however, no such special context is needed in the case of the (a) examples.

2.2 …and cases where “mere abnormality” is enough.
On the surface, the distinctions illustrated in (14)-(16) may look rather trivial. As I will show below, however, understanding the mechanism behind them, and trying to capture it precisely is not an easy task, and, as I will show in section 5 below, it cannot be handled by current exceptions tolerance mechanisms. What is even more important at this stage,
however, is the observation that there are generics where such apparently trivial distinctions seem much harder, if not impossible to make. Consider (17):

(17) Well-known forty-five year old teachers do not cook on Monday afternoons

Like (14)-(16), (17) is clearly generic: it makes a generalization, which is, moreover, nonaccidental (it supports the counterfactual “If Ann were a well known forty five years old teacher she would probably not cook on Monday afternoons either”), and it tolerates exceptions, (several such teachers who do cook on Monday afternoon would not falsify it).

But what do the legitimate exceptions to this sentence look like? Comparing (17) to (14)-(16) above, we can see that here is it much harder, if not impossible to predict this matter in advance. If we try to come up with a list of abnormal or nonstandard well-known forty-five years old teachers, as in (18), it is much harder to divide it into those who will be easily count as legitimate exceptions to (17), and those which do not (namely those who, given their abnormality, are not expected to have the VP property, and those who, although abnormal, are still expected to have the VP property, respectively):

(18) Potential legitimate exceptions to (17): well known forty five years old teachers who are exceptionally successful/ exceptionally unsuccessful/ especially fat / especially thin / who have more than ten sons / who are exceptionally rich / who are exceptionally poor / who never drink tea….

Adding more properties to (18) does not seem to change this unclarity. In contrast, if someone were to mix the descriptions in (14a) and (14b), reasonable language users would rather easily manage to re-divide the list, and probably all of them would get more or less to the same division as in (14a) and (14b) above.

Notice that I am not claiming that the legitimate exceptions to sentences like (17) are not those considered abnormal, or that with such sentences it is hard to characterize which individuals are normal and which are abnormal instances of the CN property. In fact, the abnormality constraint applies to sentences like (17) just as it does to sentences like (14): with both generics we assume that the legitimate exceptions are abnormal in some sense. Moreover, with both we can characterize which individuals are considered normal
and which abnormal. What I am claiming is that whereas in sentences like (14) we can easily tell which of the abnormal individuals are relevant for legitimizing exceptions and which are not, in (17) we cannot. With generics like (14), then, the degree to which we can specify the abnormality relevant for legitimate exceptions is high, whereas with generics like (17) it is very low.

2.3 The connection to the IS / BP puzzle

The crucial observation I would like to make now is that there is a correlation between the ability to specify the legitimate exceptions, we have just discussed, and the ability to have a felicitous IS generic. Specifically, those BP generics whose legitimate exceptions are hard to characterize are exactly the ones whose IS counterparts are infelicitous. Whereas (14)–(16), for example, can naturally have generic IS counterparts, the IS counterpart of the BP sentence in (17), namely (19), is odd as generic, and is naturally interpreted as existential:

(19) #A well known forty five years old teacher does not cook on Monday nights

Looking at other BP generics whose IS counterparts are infelicitous as generic, as in (2b)-(4b) above, supports this new observation. How the exceptions to (3b) will look like is hard to predict (exceptionally rich Norwegian students whose names end with “s”? Exceptionally poor ones? Exceptionally educated ones? Exceptionally uneducated ones? Those who have Italian ancestors? Those who do not have Italian ancestors? Etc.). In the same manner thinking about all kinds of abnormal madrigals, rooms, thick books with red paperback covers, etc., it is hard to predict which will be considered legitimate exceptions to the BP generics in (2b) and (4b) above, and which will not.

The new observation is schematically summarized in (20):

(20) The degree to which the properties of the exceptions to a generic can be specified is high with felicitous IS generics and their BP counterparts but very low with BP counterparts of infelicitous IS generics.

Obviously, we want to explain the correlation in (20). This, however, is not straightforward given the current views about IS and BP generics. Most current theories of genericity (e.g.
Chierchia 1995, 1998, Krifka et al 1995, Krifka 1995, Wilkinson 1991, ter Meulen 1995, Link 1995, Schubert and Pelletier 1988) ignore the felicity contrasts between characterizing IS and BP sentences described above, and assign them an equivalent semantic representation, including an equivalent exceptions tolerance mechanism. Such theories will have difficulties deriving the contrast in characterizing exceptions described in (20). Of the few theories which do attempt to capture the felicity contrasts between IS and BP generics, almost all (e.g. Krifka 1987, Dobrovie Sorin & Laca 1996, Cohen 1999, 2001a) assign IS and BP generics two completely different semantic structure (namely quantificational and predicational). Such theories will have problems capturing the strong similarities between minimally contrasting IS and BP generics, namely the fact that both express nonaccidental, counterfactual supporting generalizations, and the range of similarities between them concerning the way they tolerate entities, described in section 1.

What we need, then, is a theory which attempts to formally capture both the strong similarities and differences between IS and BP sentences, and which could lead to an explanation of the generalization in (20). In the next section I introduce Greenberg’s (2003) theory of generics and show how it achieves exactly these needs.

3. A theory of IS / BP generics (Greenberg 2003), and what it explains

3.1 IS and BP generics have a basically equivalent semantic structure with different accessibility relations

Greenberg (2003) argues that while both IS and BP sentences express nonaccidental, modalized, generalizations, they differ in the type of nonaccidentalness they can express. Formally, IS and BP generics are taken to have the same basic structure as in (21), where P and Q are the subject and VP properties, respectively, and the superscript “cont.norm” is a restriction on P which stands for “contextually relevant and normal” (to be made precise in section 4 below). (21) roughly says that in all appropriately accessible worlds, every contextually relevant and normal P individual has the Q property in these worlds:

\[
(21) \quad \forall w' \left[ w' \text{ is appropriately accessible from } w_0 \right] \rightarrow \\
\left[ \forall x P^{\text{cont.norm}}(x,w') \rightarrow Q(x,w') \right]
\]
Following e.g. Heim’s (1982), Chierchia’s (1995), or Krifka et al’s (1995) line of thought, the universal quantifiers over accessible worlds and individuals in (21) capture the nonaccidentalness of generics and the generalizations over individuals they make, respectively.5 (Discussion of quantification and tolerance of situations is dealt with below).

To capture the contrasts between IS and BP generics (e.g. the felicity differences between them), Greenberg (2003) argues that their modal nature, i.e. their accessibility relations are different. While both IS and BP generics can involve what is called an “in-virtue-of” accessibility relation, the other, “descriptive”, accessibility relation is available for BP generics only. The following two sections give a summary of these claims.

3.2 IS sentences express only in-virtue-of generalizations

Following Kratzer’s (1981) and Brennan’s (1993) works on nongeneric root or “circumstantial” modality, Greenberg (2003) argues that IS sentences, like *A dog has four legs* or *A boy does not cry*, necessarily assert that the generalization they express is true in virtue of a certain property that the subject is assumed to have (e.g. “having a four legged genetic makeup” or “being tough”, respectively), that the speaker has in mind and the listener has to accommodate. Formally, the accessibility relation of the sentence is what captures this in-virtue-of part. Suppose you if you hear, for example, (22a) and (23a), and the in-virtue-of properties you accommodate are “has a 4 legged genetic makeup” and “be tough”, respectively, then the sentences will be interpreted as in (22b) and (23b):

(22) a. A dog has four legs (in virtue of having a four legged genetic makeup)

       b. $\forall w'[\forall x \text{dog}(x,w') \rightarrow \text{has four legs genetic makeup}(x,w')] \rightarrow$
           $[\forall x \text{dog}^{\text{cont.norm}}(x,w') \rightarrow \text{has 4 legs}(x,w')]$ (“In all worlds where every dog has a four legged genetic makeup, every (contextually relevant and normal) dog has four legs”)

(23) a. A boy does not cry (in virtue of being tough)

5 Unlike these theories, though, the universal quantification over worlds and individuals in 21 is separated. This will allow an easier characterization of the accessibility relations below.
b. $\forall w'[\forall x \text{ boy}(x,w') \rightarrow \text{tough}(x,w')] \rightarrow [\forall x \text{ boy}^{\text{cont.norm}}(x,w') \rightarrow \neg \text{cry}(x,w')]$ (“In all worlds where every boy is tough, every (contextually relevant and normal) boy does not cry”)

Sometimes it is hard to determine which in-virtue-of property the speaker has in mind. Consider (24)-(25):

(24) An accountant in this place hardly pays taxes (in virtue of being covered by the local legislation / in virtue of being deeply dishonest / in virtue of earning almost nothing / in virtue of having connections with the mayor…)

(25) A woman in this town does not walk alone outside (in virtue of living in such a violent place / in virtue of living in such religious town / in virtue of having so many children…)

Without supporting context, the listener may end up accommodating the “wrong” in-virtue-of properties in (24) and (25), i.e. not the one that the speaker has in mind. This is very similar to what happens with Kratzer’s (1981) examples of circumstantial modality, as in I cannot play the trombone, which can be thought to be true in view of the physical condition of the trombone, the physical condition of the speaker, the fact that speaker does not know how to play, etc. What is crucial, though, is that as with Kratzer’s example, hearing sentences like (24) and (25) the listener still assumes that there is, indeed, a unique in-virtue-of property that the speaker has in mind, which she has to accommodate, and that this in-virtue-of part fixes the accessibility relation of the sentence.

The general form of in-virtue-of generics, then, is (26), where $P$, $Q$ and $S_C$ stand for the denotations of the subject, VP and the contextually supplied in-virtue-of property, respectively:

(26) $\forall w'[\forall x P(x,w') \rightarrow S_C(x,w')] \rightarrow [\forall x P^{\text{cont.norm}}(x,w') \rightarrow Q(x,w')]$ (“In all worlds where $P \subseteq Q$, all contextually relevant and normal Ps have Q’”)

Now, Greenberg (2003) argues that the choice of the in-virtue-of properties is not arbitrary but constrained by two real-world based presuppositional requirements. The first is that the
in-virtue-of property must be *associated*, given the common ground, with the subject property. A property $S$ is associated with a property $P$ in a world $w$ iff $\forall x \ P(x) \rightarrow S(x)$ follows known facts, norms, stereotypes etc. in $w$, i.e. iff this universal statement holds in all worlds which are epistemically or deontically or stereotypically etc. accessible from $w$. Clearly, without this presuppositional requirement one could wrongly take a clearly false IS sentence like “A dog has three legs” to be true, for example, in virtue of having a three legged genetic makeup. The association presupposition prevents this, since the property “having a three legged genetic makeup” is not associated with being a dog, and hence cannot serve as $S$ in (26). In addition, the association presupposition explains the infelicity of IS generics like (3a) above: Out of context we do not have (nontrivial) shared knowledge, norms or stereotypes about “extremely unnatural” properties like being a Norwegian student whose name ends with “s”. Thus there is no (nontrivial) property we associate with $P$, and the “association” presupposition on the choice of the $S$ property is not met.

In addition, the in-virtue-of, $S$, property should be taken as a reasonable causer of properties of the sort of the VP property. Thus, although false, “A dog has three legs” is felicitous since intuitively we can find a property associated with being a dog with reasonably causes “has a specific number of legs” (a property of the sort of “has three legs”). In contrast, #“A man is blond” is infelicitous since, although there are many properties we associate with being a man (“having male organs”, “loving sports”, etc.), none is taken to reasonably cause having a specific hair color (i.e. to a property of the sort of “being blond”).

Formally, we take $S$ to reasonably cause the sort of $Q$ iff there is good possibility that the disjunction $[\forall x \ S(x) \rightarrow Q(x)] \lor [\forall x \ S(x) \rightarrow \neg Q(x)]$ holds, where good possibility is defined as truth in a world $w$, maximally similar to $w_0$. Notice that this world $w$ cannot be $w_0$ itself. In our world, for example, it is not true that every individual with a four legged genetic makeup has four legs, or that every such individual does not have four legs, because of the well known mutations, accidents etc. Nor should this world $w$ be a world where *everything* takes its normal course of events relative to $w_0$, as in Krifka’s (1995) “most normal worlds” suggestion for generics, or Dowty’s (1979) inertia worlds proposal for the progressive, since such a world would not be free of mutations or accident either. These can be seen as part of the natural course of events in our world as well (clearly a world
completely free of accidents, mutations, etc. will be considered truly abnormal from the point of view of our world. Rather, following the lines of Landman’s (1993) modification of Dowty’s inertia worlds proposal, we take S to reasonably cause the sort of Q iff there is a world w, maximally similar to ours, except that S is allowed to develop on the basis of what is internal to it, with no external interruptions, and in this world the disjunction $[\forall x P(x) \rightarrow Q(x)] \lor [\forall x S(x) \rightarrow \neg Q(x)]$ holds. In such a world, for example, we indeed expect having a four legged genetic makeup to lead to having four legs or to not having four legs, and mutations, accidents, etc. do not intervene.

Notice that the choice of the in-virtue-of properties, and their relation to the VP properties is not a matter of objective facts only, but is heavily dependent on the beliefs, stereotypes, norms etc. of the speaker (and the accommodation of the listener). This is because formally, both the association relation as well as the reasonable causation relation are required to hold not in the actual world $w_0$, but in worlds similar to w given some norms, or given what our beliefs about causation relations. This may look problematic, as far as the truth conditions of generics are concerned, but I think it reflects, in fact, important observations about in-virtue-of generics, such as the fact that the felicity of IS generics depends on the beliefs / stereotypes / norms available in the common ground. Thus, the felicity of the out of the blue (3a) can significantly improve in the context of (27), whereas in the context of (28) it is again infelicitous as generic and gets a salient existential reading:

(27) There are very interesting traditions in Norway concerning professions and names. For example (a Norwegian student whose name ends with “s” wears thick green socks)

(28) I walked in the dorms and noticed that (a Norwegian student whose name ends with “s” wears thick green socks)

(27) improves the status of (3a) since in this context we can associate some property with the subject, P, property, namely obeying certain Norwegian traditions concerning names. In contrast, nothing in (28c) leads to associating a property with P, so the generic reading is again hard to get. In general, then, even if objectively there is some nonaccidental property true of every P individuals, which systematically causes the sort of Q, unless the speaker knows or believes it (and the listener accommodates it), the IS generic is infelicitous.
3.3 BP sentences can express both in-virtue-of and descriptive generalizations

Unlike IS generics, BP ones are ambiguous between an “in-virtue-of” reading and a “descriptive” reading which merely asserts that the generalization is nonaccidental\(^6\), i.e. expected to hold in other possible worlds. Crucially, in this reading we do specify the in-virtue-of factor. Formally, we do not specify the exact sense in which the possible worlds quantified over are similar to ours. Instead, these worlds are defined more vaguely as maximally, or overall similar to \(w_0\), using Stalnaker’s (1968) or Lewis’s (1973) terminology.

“Boys don’t cry”, for example, is ambiguous. It can express both an in-virtue-of generalization, just like its IS counterpart “A boy does not cry” (asserting that “every (relevant and normal) boy does not cry” holds in all worlds where “every boy is tough” holds), but also a descriptive generalization, which is especially appropriate as a conclusion of some inductive inference. Think about someone watching the behavior of enough boys in various “tear inducing” situations. This speaker may use this sentence to assert that not crying is not accidental of boys, but crucially she does not try to convey the factor in virtue of which the generalization holds. Maybe she does not even know what this factor is, and even if she does, conveying it is not an integral part of the assertion, so the listener is not committed to accommodate it. The sentence, then, has an interpretation along the lines of (29), asserting that in all worlds in the union set of \(w_0\) and the set of worlds which are maximally similar to \(w_0\) (except from what is needed to allow for the existence of different or nonactual boys) every contextually relevant and normal boy does not cry:

\[
\forall w' \left[ w' \in \{w_0\} \cup \{w'' : w'' \mathcal{R}_{\max} w_0\}\right] \rightarrow \left[ \forall x \text{ boy}_{\text{cont.norm}}(x,w') \rightarrow \neg \text{cry}(x,w')\right]
\]

Crucially, although BP sentences are potentially ambiguous, there are cases where the only possible reading they can have is descriptive. These are exactly the cases seen in (2b)-(4b) above (e.g. “Norwegian students whose names end with “s” wear thick green socks”), namely those where no appropriate in-virtue-of property is available in the context, so the “in-virtue-of” reading is blocked. Since IS sentences can only express “in-virtue-of” generalizations, the IS counterparts of such BP sentences (e.g. (2a)-4a)) are infelicitous as

generic. Since the BP sentences are potentially ambiguous, they are still felicitous in such cases, but crucially, they are unambiguously descriptive\(^7\).

3.4. Back to the contrast in tolerating exceptions – the intuitive explanation

We are now in a position to explain the correlation summarized in (20) above, between the ability to characterize legitimate exceptions and the ability to have a felicitous IS generic. Given the claims made above about IS and BP generics, we can now rephrase (20) as (30):

\[(30) \quad \text{The degree to which the properties of the exceptions to a generic can be specified is high with in-virtue-of generics (where an in-virtue-of property is available), but very low with unambiguously descriptive generics, (where no such in-virtue-of property is available).}\]

We can now explain (30) in the following way: Once a language user has in mind in virtue of what the generalization is true, she can predict, at least to some extent, which properties characterize the exceptions. Intuitively, these properties are those which are taken, from the point of view of \(w_0\), to block the “reasonable causation” relation between the in-virtue-of and the VP property. Assuming that “A dog has four legs” holds in virtue of having a four legged genetic makeup, for example, the legitimate exceptions are dogs with properties which are taken to block the reasonable causation relation between “having a 4 legged genetic makeup” and “having 4 legs”, that is properties in (31a), but not in (31b), even though the latter can be taken as abnormal properties of dogs, just like the former:

\[(31) \quad \begin{align*}
    & \text{a. Undergoing an accident, having mutations, being part of a medical experiment} \\
    & \text{b. Having a vocal cords problem, having 5 names, loving semantics}
\end{align*}\]

Consider, in contrast, a BP sentence like (3b) (“Norwegian students whose names end with “s” wear thick green socks”), which is, as claimed above, unambiguously descriptive. All

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\(^7\) Cf. the findings of Prasada and Dillingham 1999 who show that whereas informants gave many BP generics both a ‘by virtue of’ and an ‘in general’ paraphrase, some BP sentences can only get the ‘in general’ paraphrase.
we assert in uttering such sentences is that the generalization is nonaccidental, crucially, without specifying (or even knowing) in virtue of what it is nonaccidentally true. Thus, it is much harder (if not impossible) to say which properties block the in-virtue-of (i.e. the reasonable causation) relation, and consequently which properties characterize the legitimate exceptions. All we can say is that these properties must be abnormal in some sense, but we cannot specify the right “sense” of the abnormality relevant here.

There are two pieces of data which support this line of thought. The first is that there are, in fact, IS sentences like (24) and (25), repeated here, where characterizing the legitimate exceptions seems very hard, similar to descriptive BP generics like (3b):

(24) An accountant in this place hardly pays taxes (in virtue of being covered by the local legislation / of being deeply dishonest / of earning almost nothing / of having the right connections with the mayor…)

(25) A woman in this town does not walk alone outside (in virtue of living in such a violent place / of living in such religious town / of having so many children…)

Hearing (24) and (25) out of the blue it is hard to determine how the legitimate exceptions to these sentences will look like. Are the legitimate exceptions to (24) accountants in this place who earn lots of money? Those who earn very little? Those who work under the direct supervision of their manager? Very new ones? Very old ones? Are the legitimate exceptions in the case of (25) women in this town who are fully armed? Those who have a special permission from the local rabbi? Both?

Once the sentences are uttered in context, however, and a unique in-virtue-of property is chosen, the apparent vagueness with respect to the exceptions is to a large extent resolved. For example, armed woman can be taken as legitimate exceptions to (25) if we accommodate “in-virtue-of living in such a dangerous place”, whereas woman with a special permission from the rabbi can be taken as exceptions if we accommodate “Living in such a religious town”.

The second support comes from examining exceptional situations to habitual sentences with referential subjects. Like BP generics, these habituals are potentially
ambiguous between an in-virtue-of and descriptive generics. “Mary walks to school”, for example, can make a descriptive generalization, based on watching Mary for a couple of mornings, and merely asserting that her walking to school in every relevant and normal situation is not accidental, without having in mind (or even knowing) the in-virtue-of factor. Crucially, in this case it is hard to characterize in which abnormal situations we expect her not to go to school, and in which of them we still expect her to go to school (stormy situations? situations where she is offered a lift? where she has an exceptional amount of money? where she sleeps by a friend? all of them? etc.).

This unclarity is resolved to a large extent when the context shows that the sentence is asserted in virtue of a certain property, and when such a property is accommodated. For example, assuming that Mary walks to school in virtue of not having money for the bus, we could predict that when she is offered a lift by her friend she would not walk to school, i.e. this situation will be considered legitimately exceptional. But if we assume that Mary walks to school in virtue of her wish to train herself for long walks, then it will be exceptionally stormy days, and not days when she is offered a lift, which will be considered legitimately exceptional.

4. Formally characterizing the tolerance mechanism of IS and BP generics.

We are now in a position to integrate the observations and intuitions developed in the previous sections into a precisely defined exceptions tolerance mechanism of IS and BP generics. I start by reviewing Kadmon & Landman’s (1993) supervaluationist proposal for a “domain vague restriction” on Gen. This will supply us with the formal tools for capturing the degree to which the properties of the exceptions can or cannot be specified.


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This similarity between BP generics and habituals with referential subjects is one of the indications that the availability of both in virtue of and descriptive readings with BP sentences should be derived from the potentially referential status of bare plural NPs (see e.g. Carlson 1977 and more recently Chierchia 1997 analysis of BP NPs as kind referring even in characterizing sentences). In contrast, the fact that IS sentences are only compatible with an ‘in virtue of a property’ modality should be derived from the property-only interpretation of IS NPs. A fully compositional account deriving the difference in truth conditions of IS and BP sentences from the semantic difference between IS and BP NPs, however, is well beyond the scope of this paper (but see Greenberg 2003 for a preliminary suggestion along these lines).
4.1.1 Kadmon & Landman’s proposal: Like many other theories of genericity Kadmon & Landman (1993) (K&L, henceforth) take the generic operator, Gen, to be universal and modalized\(^9\), and propose to account for the tolerance of exceptions by a restriction on the quantification over individuals\(^10\). To capture the difference between generics and universals like Every owl hunts mice, K&L propose that in the latter the restriction is precise: the speaker has in mind a precise set of restricting properties, even if she does not specify them explicitly, which is supposed to be accommodated by the listener, (often with the help of context). In context, then, no relevant individual can be excluded from the quantification, and no exceptions are tolerated. In contrast, the set of properties restricting Gen is vague:

For a generic statement there is no well-defined set of objects that the universal statement ranges over. We don’t expect the context of utterance to make clear what the objects are exactly that the generalization expressed applies to. And we don’t attempt to accommodate a precise set of objects. Hence, when we encounter objects that do not fall under the generalization expressed, there is always the possibility that they are not among the objects that the generalization is supposed to apply to, and we are therefore able to regard them as legitimate exceptions (409). ...What we would like to propose, then, is that it is an integral part of the nature of generic statements that the restricting set of properties is vague...Saying “An owl hunts mice” is just like saying “every (possible) owl with the right properties hunts mice”, while, crucially not committing yourself to what the right properties are. (p. 408, original emphasis)

K&L’s proposal is based on the following intuitive observation:

We feel that when you use a generic NP, you are not trying to be precise...It is not supposed to be clear to your hearers exactly what owls are supposed to actually hunt mice. Adult owls? Healthy owls? Ones that live in nature? Ones that are not spoiled by some person who brings them food? Ones that have mice to hunt? Ones that don’t happen to be crazy?...And so on and so forth. (p. 407)

Notice that this observation is very similar to the one we had above, about the difficulty in characterizing the exceptions to unambiguously descriptive BP generics. As I will show below, however, these two observations are not equivalent.

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\(^9\) Kadmon & Landman deal only with IS generics (and do not attempt to explain the differences between them and their BP counterparts).

\(^{10}\) A general problem for restricting the subject domain of generics, pointed out by Carlson 1999, is posed by sequences like “Pheasants lay speckled eggs. Once rare, they now number in the millions” (p 10). Intuitively, the first sentence talks only about female (birthing) pheasants. But if this is done by restricting the domain of the BP then we have a problem since the pronoun in the second sentence, which seems to refer back to the BP, refers to pheasants in general. One direction of solving this problem is to assume that anaphora in generically interpreted expressions may work differently than anaphora in extensional sentences. Another possible suggestion is that the BP and the pronoun in this sentence are both originally interpreted as kinds (and anaphora is allowed), and at a latter stage some type shifting operation takes place (as suggested in e.g. Cohen 1999) and we get quantified structure with two different domain restrictions.
Formally, K&L take Gen to be a nominal GQ, and define a domain vague restriction on the CN property. I will adapt their definitions to present framework, in which Gen is a sentential operator. In the case of (32), for example, I will represent the domain vague restriction on the set of professors as the superscript “Xprofessor”, as in (33). (This replaces the informal “cont.norm” restriction from section 3.1):

(32)  (In this university) A professor wear a tie / Professors wear a tie

(33)  \( \forall w' [w' R w_0] \rightarrow [\forall x, s \text{ professor}_x (x, \text{ wear a tie } (x, w'))] \)

K&L take the domain vague restriction to be a pair \(<v_0, V>\). \(v_0\) is the precise part of the restriction, i.e. a (possibly empty) consistent set of properties, all of them compatible with the CN property (“professor”), which is directly provided by the context. In contrast, \(V\) is the vague part of the restriction. K&L follow the supervaluationist approach to vagueness, originally developed by e.g. Kamp (1975) and Fine (1975) to deal with vague predicates like “tall”, “bald”, etc., according to which the core characteristic of vagueness is that there are various possible ways to resolve it and get to a precise statement, or, using Fine’s terminology various possible “precisifications”. Crucially, with vague predicates there is no way to completely determine which of these precisifications is better than the others, so we are left with all of them. Following this line of thought, K&L define \(V\) as a set of precisifications on \(v_0\) - i.e. as a set of sets of properties, each of which is (a) consistent, (b) contains only properties compatible with the CN property and (c) is a superset of \(v_0\) (the contextually supplied properties).

In the case of (33), for example, each precisification in \(V\) has “in this university” as a member, together with other properties. Thus one precisification (set of properties) can be \{in this university, \(V_1, V_2, V_3, V_4\}\, another is \{in this university, \(V_5, V_6, V_8, V_{16}\}\, another is \{in this university, \(V_9, V_{11}, V_{20}\}\ etc. (where \(V\) stands for a property). Each such precisification in \(V\) represents one possible way of making the restriction precise, (which is compatible with what is already known from the context), where crucially, there is at least one context where we do not determine which of these “ways of making the restriction precise” is better than others, and consequently where all precisifications are available.
Thus, even if we encounter a professor who does not wear a tie there is a possibility that he lacks a property in one of the (unchosen) precisifications, and is thus not quantified over. Consequently, this professor can be considered a legitimate exception to (32).

K&L’s suggestion naturally captures the interaction, discussed in section 1, between irrelevant and exceptional individuals tolerated by generics. While contextually irrelevant individuals are excluded from the domain of quantification by considering properties in the precise part of the restriction, namely \( v_0 \), exceptional individuals are excluded by assuming that they lack a property in one of the unspecified precisifications in the vague part \( V \).

K&L’s suggestion also explains the observation made in section 1, that taking a contextually irrelevant individual, but not an exceptional individual, as a counterexample to a generic statement is evaluated as a misunderstanding. In K&L’s definitions only the properties of the relevant entities are in the precise part of the restriction and need to be accommodated. In contrast, properties of the nonexceptional entities are in the vague part, i.e. in the set of precisifications, and since the speaker does not necessarily have in mind a unique precisification, the listener is not expected to accommodate it either.

Finally, using K&L’s framework we can easily capture the observation, made in section 1, that IS and BP generics tolerate situations in a way strikingly similar to the way they tolerate individuals. Assuming that VPs denote sets of situations, we do that by imposing a domain vague restriction on the set of situations quantified over by Gen. (32), for example, will be represented as in (34), where the superscript “Ywear-a-tie” is the domain vague restriction on the set of situations:

\[
(34) \quad \forall w' \left[ w' \mathcal{R} w_0 \right] \rightarrow \left[ \forall x,s \left[ \text{professor}^x_{\text{professor}} (x,w') \land \text{Involve}^{\text{Ywear-a-tie}} (s,x,w') \right] \rightarrow \text{wear a tie} (s,x,w') \right]
\]

Following K&L’s line of thought we define “Ywear-a-tie” as a pair \(<k_0, K>\). \( k_0 \) is the precise part in this pair, namely a contextually supplied set of properties of situations. Since, as discussed in section 1, the contextual relevance of situations can be usually recovered from the presuppositions, implicatures or real world knowledge of the VP, we want to define \( k_0 \) as systematically keyed to the VP property. For example, given what we know about the VP “wearing a tie”, \( k_0 \) in (34) can be defined as the set \{being a formally
dressed situation}, so e.g. shower situations are considered irrelevant\(^\text{11}\). In contrast to \(k_0\), \(K\), the vague part of the restriction over situations is a set of precisifications on \(k_0\), namely a set of sets of properties of situations, each of them is a superset of \(k_0\), for example \(\{\)being a formally dressed situation, \(K_1, K_2, K_3, K_4\}\), \(\{\)being a formally dressed situation, \(K_2, K_3, K_5, K_6\}\), \(\{\)being a formally dressed situation, \(K_5, K_7, K_8, K_6\}\), etc (where \(K\) is a property of situations). Each such precisification represents one way of making the restriction over situations precise, and again – there is at least one context where no unique precisification is chosen. Thus, \(K\) excludes from quantification all situations which lack a property in one of the (unchosen) precisifications, and by that allows tolerance of exceptional situations, whose characterization is vague.

As mentioned above, irrelevant or exceptional situations are tolerated only when the VP is stage level. This can be easily captured by requiring both \(k_0\) and all sets of properties in \(K\) to be empty with individual level VPs (like “have four legs” as in (1)), so all situations end up being quantified over in such cases.

K&L’s approach, then, is also productive in capturing the tolerance of situations by generics. In the reminder of the paper I will focus again on the tolerance of individuals.

\subsection*{4.1.2 Some problems and the direction of an improved theory:} K&L’s vague restriction, however, cannot be the whole story regarding the exceptions puzzle since it is, in fact, \textit{too} vague. The only limitations imposed on it is that all sets of properties in it are consistent, and that it only properties which are compatible with the CN property. Besides these two “logical” limitations, K&L’s definition imposes no constraint on which property can and which cannot be part of the precisifications. It thus wrongly predicts any property what so ever to potentially legitimize exceptions.

As seen above, however, language users have two systematic intuitions about which properties can and which cannot legitimize exceptions. The first is the abnormality constraint, according to which e.g. having a mutation, but not having a tail, will be a property of legitimate exceptions to (1). In addition, with in-virtue-of generics we also have the relevant abnormality constraint, according to which e.g. “undergoing an accident”, but not “having vocal problems” will characterize the exceptions to (1). K&L’s definition cannot capture these two systematic constraints since there is nothing in it which will

\(^\text{11}\) But notice again that the utterance context can further limit the domain. For example, in certain contexts only ‘meetings with the Dean’ can be taken to be contextually relevant situations.
guarantee that some properties should be preferred members of the precisifications over other properties. All properties have an equal status.

More generally, K&L’s definitions allow only two possibilities in the restriction of generics: total specificity (with respect to the properties of the irrelevant entities, excluded by \( v_0 \)), and total vagueness (with respect to the properties of the legitimate exceptions, excluded by \( V \)), whereas in reality language users take the characterization of the exceptions to generics to be partially vague: though there is no precise list of properties of exceptions, we are not totally ignorant concerning their characterization. Moreover, the restriction is partially vague to two different degrees: a high one (with unambiguously descriptive generics, involving mere abnormality) and a lower one (with in-virtue-of generics, involving relevant abnormality). Our goal, then, is to define two constraints on K&L’s restriction, which capture these two degrees of vagueness.

4.2 The abnormality constraint on K&L’s domain vague restriction

The abnormality constraint holds for both in-virtue-of and descriptive generics: In both cases we take the properties which legitimize exceptions to be those considered abnormal. One way to think about this intuition, is to define abnormal as “true of the minority”. Thus, if a property is assumed to hold of the minority of contextually relevant \( P \) individuals, then individuals having it are considered abnormal, and, thus, legitimate exceptions to the generic. (35) is an attempt to make this idea precise:

\[
(35) \quad \text{The abnormality constraint on K&L’s domain vague restriction: Any set of properties } v \text{ in } V \text{ is such that } \left| \cap v \cap P \right| \text{ in } c \text{ is not significantly smaller than } \left| \cap v_0 \cap P \right| \text{ in } c
\]

(35) says that the number of the \( P \) individuals who have the properties in any of the precisifications \( v \) in \( V \) is not significantly smaller in the context \( c \), than the number of contextually relevant \( P \) individuals as a whole. Consider, e.g. (36), its representation in (37), and the abnormality constraint on the vague restriction \( x_{\text{first grader}} \) in (38):

\[
(36) \quad \text{(Context: talking about this school) First graders finish school at 13.00}
\]

\[
(37) \quad \forall w' [w' R w_0] \rightarrow [\forall x \ x_{\text{first grader}} x_{\text{first grader}}(x, w') \rightarrow \text{finish at 13.00 } (x, w')]
\]
(38) Abnormality constraint on $\chi_{\text{first grader}}$: $|\cap v \cap \text{first grader in } c|$ is not significantly smaller than $|\text{in this school } \cap \text{first grader in } c|$.

The contextually supplied property in $v_0$ for (37) is “in this school”. According to (38) no matter which properties we put in each precisification $v$ in “Xfirst grader”, and no matter which precisification $v$ we look at, the result of intersecting these properties with the property of first graders will yield a set which is not significantly smaller than the set of first graders in this school. I.e. the result is always the significant majority of first graders in this school. Crucially, this means that not only the intersection of properties, but also any single property in any precisification must hold of the majority of relevant individuals (e.g. of first graders in this school), since if we were trying to intersect a property of the minority with all other properties in $v$, the intersection could never yield the majority of relevant individuals, as required by (35). This correctly captures our intuitions about what the abnormality constraint means: only properties of the minority (abnormal properties like having no school bag, or being younger than four year old) are necessarily excluded from the restriction, and only individuals with such properties (i.e. abnormal individuals) are not quantified over, and are therefore considered legitimate exceptions to (36).

12 The claim that generics quantify over the majority of the members of the subject set is made in Cohen 1996, 1999. See section 5 for a brief comparison between Cohen’s approach and the present one.

13 As a reviewer correctly points out, this definition cannot help us account for the fact that BP generics like (i) and (ii) (sometimes called ‘Port-Royal puzzle generics’) can be true even if only a minority of the members of the subject set has the VP property:

(i) Dutchmen are good sailors
(ii) Frenchmen eat horsemeat

In this paper, however, I follow e.g. Krifka et al’s 1995 approach who claim that such BP sentences do not seem to be characterizing generics at all, but rather Direct Kind Predication (DKP) structures, which do not involve generic quantification. Thus, sentences like (i) and (ii) are not supposed to be subject to definitions like (35) regarding the domain vague restriction on the generic quantifier. Krifka et al show that, unlike a BP sentence like (i), which seems to mean that “the Dutch distinguish themselves from other comparable nations by having good sailors” (p. 82), the IS counterpart of (i), namely (iii) has the stronger and more standard ‘characterizing’ generic interpretation according to which “we can more or less expect that a random Dutchman will turn out to be a good sailor” (p. 82):

(iii) A Dutchman is a good sailor

To this observation we can add two more: First, unlike standard characterizing generics, sentences like (i) and (ii) do not support counterfactuals in the usual way. For example (i) does not support the truth of “If my brother was a Dutchman, he would probably also be a good sailor”. Second, the subjects of all examples of BP sentences with a ‘Port Royal puzzle’ interpretation I am aware of refer to well established kinds like nationalities (as in (i) and (ii)), or biological kinds, as in “Tigers eat people” (from Cohen 2001b). This further supports the claim that such generics express DKP, and not generic quantification. (But see e.g. Cohen 1996, 2001b, for a quantification, probability-based analysis to such generics, called by him ‘relative generics’).
Notice that whereas according to (35) a precisification can have only properties of majority as members, it clearly does not have all such properties as members. If the precisifications contained all properties of the majority (e.g. “not being called David”, “not being called Susan”, “not being called Harry”, “not being called Mary”, etc.), then we would be wrongly left with no individual to quantify over, and this would contradict (35), according to which we should end up with the majority of relevant individuals. This also means that simply being a property of the majority does not necessarily put you in the precisifications and the restriction on Gen. If this were the case then assuming, e.g. that “not having a name beginning with A” is a property of the majority (of first graders in this school), we would wrongly predict (36) to be automatically interpreted as First graders (in this school) whose name does not begin with “A” finish at 13.00”. But we don’t. All that (35) requires is that each precisification should consist of a certain combination of properties of the majority, and it is easily met if this combination has only part of these properties. (35), then, does not make any prediction about “not having a name beginning in A”, or about any other specific property of the majority (being such a property you may or may not end up in the restriction). It does make predictions about properties of the minority (being such a property necessarily prevents you from being in the restriction).

Finally, notice that a consequent of definition (35) is that although the legitimate exceptions to generic sentences are still considered “abnormal”, as the widely- held intuition says, we clearly do not use the term “abnormal” in its everyday, common use as “far from the norm”, or “not stereotypical”. Rather, the term means (roughly): “has certain properties (or a property) of the minority”. This is a welcome result, since, as a reviewer correctly pointed out, a generic like (24) above can be true even if the only well-known forty five year old teacher who does cook on Monday afternoons is Ann, who is the most stereotypical well-known forty five year old teacher. Put in other words, the most stereotypical member of the set can clearly be considered a legitimate exception to a generic. Indeed, such a member cannot be considered “abnormal” in the everyday use of the word of “far from the norm”, or “far from the stereotype”. However, in the present theory “abnormal” does not have this everyday use, but the weaker use “has a property of the minority”. Thus, using the definition of “abnormality” in (35) is compatible with a stereotypical member of a set being a legitimate exception to a generic sentence, since even such members have “properties of the minority”. A general advantage of the present theory,
then, is that it clarifies the meaning of the what “abnormal” is and what it is not, as far as
generic sentences are concerned\(^\text{14}\).

4.3 The relevant abnormality constraint on K&L’s domain vague restriction

The abnormality constraint in (35) captures correctly the way exceptions to descriptive
generics are tolerated. But this is not enough for in-virtue-of generics. As seen above here
we need also to capture the fact that the exceptions are *relevantly* abnormal, where
“relevantly abnormal” means “being a property which blocks the reasonable causation
relation between the in-virtue-of property, S, and the VP property, Q”. We start, then, by
defining a set of blocking properties \(B^{\langle S, Q, w \rangle}\), as in (39):

\[
(39) \quad B \in B^{\langle S, Q, w \rangle} \quad \text{iff} \quad B \text{ is taken to be a property which, from the point of view of } w \text{ “blocks” the reasonable causation relation between } S \text{ (the in-virtue-of property) and } Q \text{ (the VP property).}
\]

E.g. \(B^{\langle \text{have a four legged genetic makeup, have four legs}, w \rangle}\) is the set of properties
which, from the point of view of \(w\), block the reasonable causation between having a four
legged genetic makeup and having four legs. “Having a mutation”, “undergoing an
accident” or “cutting off one’s leg” are intuitively in this set, while “being yellow” or
“having vocal problems” are not\(^\text{15}\).

An important observation about \(B^{\langle S, Q, w \rangle}\) is that this is, in fact, a *vague* set of
properties, i.e. a vague second order property. We can think about this vagueness very
similarly to the way the vagueness of first order properties, like “bald” is treated in
supervaluations theories. Take again \(B^{\langle \text{have a four legged genetic makeup, have four
legs}, w \rangle}\). Properties like “having a mutation in the gene responsible for number of legs” or
“cutting off one’s own leg”, are definitely in this set (in supervaluationist terms: they are in

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\(^\text{14}\) See section 5 below for a comparison between the present approach to ‘abnormality’ and other approaches.

\(^\text{15}\) Formally, assuming that \(S\) is a reasonable causer for \(Q\), then \(B \in B^{\langle S, Q, w \rangle}\) iff in \(w\) \(\forall x \left[ S(x) \land B(x) \right] \rightarrow \neg Q(x)\). For example, assuming that having a four legged genetic makeup reasonably causes having four legs,
‘having a mutation in the gene responsible for number of legs’ would be taken as property blocking this
reasonable causation, from the point of view of \(w_0\), since in \(w_0\) every individual with a four legged genetic
makeup who has a mutation in this genetic makeup would not have four legs (I am disregarding further and
more far fetched scenarios, e.g. the possibility that such an individual would have four legs as a result of some
transplant). In contrast, it is false that every individual with such a genetic makeup who has a problem in his
vocal cords will not have four legs. But see the discussion of the vagueness of blocking properties below.
the positive extension and hence present in all precisifications). Other properties, like “being infertile”, or “having vocal problems”, are definitely not in this set (they are in the negative extension and hence absent from all precisifications). And still other properties, e.g. “living in an area with many traps”, or “having a serious blood infection”, are borderline cases (present in only some precisifications). Speakers can be uncertain whether these properties do or do not block the reasonable causation relation between “having a four legged genetic makeup” and “having four legs”. Another example is (25) above (A woman in this place does not walk alone outside). Suppose (25) is uttered in context, so one unique in-virtue-of property is accommodated, e.g. “in virtue of living in a violent place”. Thus we are interested in the set of “blocking” properties \( B\langle \text{living in this dangerous place, not walking alone outside}, w\rangle \). This set is vague as well, with properties in its positive extension, e.g. “being fully armed”, in its negative extension, e.g. “having a name ending with f”, and crucially, also with borderline blocking properties, e.g. “being the mafia leader’s wife”. It may be unclear whether this latter property indeed blocks a woman in this violent place from walking alone outside, or not.

In supervaluationist terms, the vagueness of the set of blocking properties \( B\langle \text{S,Q},w\rangle \) means that this set of properties is, in fact, a set of sets of properties. We redefine, then, \( B\langle \text{S,Q},w\rangle \) as in (40) and (41) (where \( B \) is a set of properties and \( b \) is a property):

\[
\begin{align*}
\text{(40)} \quad & B\langle \text{S,Q},w\rangle \text{ is vague set of properties where for any set of properties } B \in B\langle \text{S,Q},w\rangle \text{ it holds that } b \in B \iff b \text{ is a property which, from the point of view of } w \text{ “blocks” the reasonable causation relation between } \text{S and Q.} \\
\text{(41)} \quad & \text{a. The set of definitely blocking properties is } \{b: b \in \bigcap B\langle \text{S,Q},w\rangle \text{ (present in all sets of } B\langle \text{S,Q},w\rangle)\} \\
& \text{b. The set of definitely nonblocking properties is: } \{b: b \notin \bigcup B\langle \text{S,Q},w\rangle \text{ (present in no set of } B\langle \text{S,Q},w\rangle)\} \\
& \text{c. The set of borderline blocking properties is } \{b: b \in \bigcup B\langle \text{S,Q},w\rangle \land b \notin \bigcap B\langle \text{S,Q},w\rangle \text{ (present in some, but not all sets of } B\langle \text{S,Q},w\rangle)\}
\end{align*}
\]

Turning back to generics, we want to ensure that (a) the legitimate exceptions to in-virtue-of generics are those individuals with blocking properties and (b) Any vagueness in
characterizing the legitimate exceptions to in-virtue-of generics is due to the vagueness of what is and what is not considered a blocking property. We achieve that in (42), the relevant abnormality constraint on the domain vague restriction, by requiring that besides the contextually supplied properties, the properties in the restriction on Gen are the complements of the blocking properties defined in (40) and (41):

\[(42) \text{The relevant abnormality constraint on the domain vague restriction} (<v_0, V>):\]

a. \(\forall v \in V, v_0 \subset v,\)

b. (i) if \(b \in \cap B_{<S,Q,w>}\) then \(b^\prime \in \cap V\)

(ii) If \(b \notin \cup B_{<S,Q,w>}\) then \(b^\prime \notin \cup V\)

(iii) If \(b \in \cup B_{<S,Q,w>} \land b \notin \cap B_{<S,Q,w>}\) then \(b^\prime \cup V \land b^\prime \notin \cap V\)

(42a) is K&L's requirement that every precisification in the restriction is a superset of \(v_0\) – the set of contextually supplied properties. (42bi-iii) guarantees that, besides the properties in \(v_0\), complements of definitely blocking properties are definitely in the restriction, complements of definitely nonblocking properties are definitely not in the restriction, and borderline blocking properties are borderline properties in the restriction.

To see how (42) works take again (1) (“A dog has four legs”). In this sentence the set of contextually supplied restricting properties \(v_0\) is empty (i.e. there are no contextually irrelevant dogs). The relevant abnormality constraint in (42bi) correctly guarantees that we end up definitely quantifying over all dogs that do not have mutations or who did not undergo an accident. These properties are the complements of the definitely blocking properties in \(B_{<<\text{have a four legged genetic makeup, have four legs}, w>>}\), and thus, given (42bi), present in all sets of properties the restriction of Gen. Consequently, dogs with mutations or who did undergo accidents are definitely not quantified over in the first place, and are thus definitely predicted to be legitimate exceptions to (1), as our intuitions tell us. On the other hand, since “living an area with many traps” is a borderline member of \(B_{<<\text{have a four legged genetic makeup, have four legs}, w>>}\), its complement (“not living in an area with many traps”) is present in only some of the precisifications in the restriction on Gen (given (42biii)). Thus, we have vagueness concerning whether dogs living in an area with many traps will or will not characterize the legitimate exceptions to (1). Finally, since being infertile or having vocal problems are definitely nonblocking properties (they are
present in no precisification of \( B<<\text{have a four legged genetic makeup, have four legs}, w>\), their complements (being fertile and not having vocal problems) are present in no sets of properties in the restriction, as (42bii) dictates. Thus, infertile dogs or dogs with vocal problems are not excluded from the quantification over Gen. Consequently, unless they happen to have some other “blocking property”, infertile dogs or dogs with vocal problems are not considered legitimate exceptions to (1), and thus (correctly) predicted to be covered by the generalization in (1)\(^{16}\).

4.4 Back to the contrast in characterizing exceptions

We are now in a position to explain precisely the generalizations in (20) and (30), above, summarized here as (43):

\[
(43) \quad \text{The degree to which the properties of the exceptions to a generic can be specified is high with in-virtue-of generics (i.e. IS generics and their BP counterparts) but very low with unambiguously descriptive generics (i.e. BP generics with infelicitous IS counterparts).}
\]

In the section above we saw that the domain vague restriction of in-virtue-of generics is limited by the relevant abnormality constraint in (42) (in addition to the abnormality constraint in (35). This enables us to specify both the positive and the negative extension of the restriction of Gen (by specifying the positive and negative extension of \( B<<S,Q.,w>\)), so the only source of vagueness in the characterization of the legitimate exceptions are the borderline properties in the restriction, i.e. the borderline properties in the vague set \( B<<S,Q.,w>\) (e.g. “living in an area with many traps”, in the case of (1)). In contrast, descriptive generics are limited by the abnormality constraint only, which, crucially, allows us to characterize only the negative extension of the restriction, namely the properties

\[^{16}\text{Notice that the restriction of in virtue of generics should be limited using both the relevant abnormality, and abnormality constraints, since relevant abnormality alone is not enough to guarantee that we end up quantifying over the majority of relevant individuals. Suppose we hear (25) and accommodate ‘in virtue of the fact that this place is so violent’, so, e.g. fully armed women are taken to be legitimate exceptions (they have a ‘blocking property’). The problem arises when such a ‘blocking’ property happens to be a normal property, i.e. a property of the majority of women in this town, so despite the violence most women in this town do walk alone outside. In such a situation (25) is judged as false, but if the relevant abnormality in (42) is the only constraint we use, the sentence is wrongly predicted to be true. Adding the abnormality constraint in (25), then, ensures that only abnormal blocking properties legitimize exceptions to in virtue of generics.}\]
which are present in no precisification v-v₀. These are the properties which are definitely considered properties of the minority of relevant P individuals, since adding them to the restriction will violate the requirement in (35) that we should end up quantifying over the majority of relevant P individuals. Crucially, however, we have no way to characterize the positive extension of the restriction with descriptive generics, i.e. to find even one property X which is present in all precisifications v-v₀, since, as explained in section 4.2 above, even if some property is clearly a property of the majority (e.g. “not having a name beginning with A” in the case of (36) above), this does not yet ensure that it is a member of all precisifications (though it may be a member of some of them). Consequently, the negation of such a property (e.g. the abnormal property “having a name ending with A”) is a borderline case - there is no way to predict in advance that it definitely will or definitely will not characterize the exceptions to (36). The same procedure holds for any other property of the majority of relevant P individuals.

The higher degree of vagueness concerning the properties of the legitimate exceptions with descriptive generics, then, results from the fact that we end up with many more “borderline” properties in the restriction than we do with in-virtue-of generics.\(^{17}\)

4.5 Characterizing accessibility relations as (potentially) vague restrictions on worlds

We have just defined the restriction on the set of individuals as vaguer with descriptive than with in-virtue-of generics. But notice that we can also treat the difference between the in-virtue-of and descriptive accessibility relations as a difference in degree of vagueness: In Greenberg (2003) the in-virtue-of accessibility relation is very specified: we look only at worlds where every member of the subject set has a contextually supplied in-virtue-of property (e.g. with “A dog has four legs”, we look only at the worlds where every dog has a four legged genetic makeup). In contrast, with descriptive generics no in-virtue-of property is specified, and consequently we do not specify the exact way that the accessible worlds are similar to w₀, but define them in a vaguer way, as maximally or overall similar to w₀.

\(^{17}\) While the lack of specification of properties of the majority in the restriction of unambiguously descriptive generics has the advantage of capturing the intuition about their vagueness with respect to the properties of their exceptions, a reviewer notes that this lack of specification may lead to problematic or too weak truth conditions for such generics. Further research should attempt to clarify whether more constraints on the restriction of descriptive generics is indeed needed, and which intuitive judgments on the truth conditions and legitimate exceptions of such generics justify such additional constraints.
Thus, the degree of vagueness w.r.t. the restriction on individuals correlates with the degree of vagueness w.r.t. the restriction on worlds, as schematically summarized in (44):

<table>
<thead>
<tr>
<th></th>
<th>Degree of vagueness of the accessibility relation</th>
<th>Degree of vagueness w.r.t properties of the exceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unambiguously in-virtue-of generics</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Unambiguously descriptive generics</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

Now, instead of unnecessarily defining two contrasts in the degree of vagueness (on \( \forall w \) and on \( \forall x \)) we can define only a difference in degree of vagueness of \( \forall w \), and then define an algorithm which will derive from it the difference in degree of vagueness of \( \forall x \).

Formalizing the intuitive difference in vagueness between the in-virtue-of and the descriptive accessibility relations can be done by slightly deviating from Greenberg’s (2003) original view, according to which with the former there is an in-virtue-of property in the semantic structure, whereas with the latter there is no such property at all (so we use “maximal” or “overall” similarity). In an alternative view we can claim that that with both types of generics we take the generalization to hold in virtue of some property. But that this property is specified to the speaker only with in-virtue-of generics, while with unambiguously descriptive ones, it is unknown or unspecified. Formally, we represent the accessibility relation as a set of propositions (and thus as a set of sets of worlds), which is precise in the case of in-virtue-of generics, and vague in the case of descriptive generics. In both cases we universally quantify over all worlds where every P member has the in-virtue-of, S, property:

\[
\forall w' [w' \in \forall x P(x) \rightarrow S(x)] \rightarrow \forall x [w' \in \forall x P^{xP}(x) \rightarrow Q(x)]
\]

With in-virtue-of generics, S is fixed in every context of utterance c. Consequently, in every context c we end up with a precise set of worlds quantified over. For example, if in a
context c where “An accountant hardly pays taxes” is uttered we choose “in virtue of being dishonest”, then we quantify over all worlds where every accountant is dishonest. In contrast, with unambiguously descriptive generics like “Norwegian students whose names end with “s” wear thick green socks”, the choice of in-virtue-of property S is not resolved by context, i.e. even in a specific context c S is unknown, so there are multiple potential properties playing its role in (45). Consequently, we end up having multiple propositions of the form \( \forall x P(s) \rightarrow S(x) \) in (45), (e.g. \( \forall x P(s) \rightarrow S_1(x) \), \( \forall x P(s) \rightarrow S_2(x) \), \( \forall x P(s) \rightarrow S_3(x) \), etc.), and thus with multiple potential sets of accessible worlds, each of them represents one way of making the accessibility relation precise.

We now define a restriction \( X_p \) on the set of individuals in (45) for both in-virtue-of and descriptive generics, which is sensitive to the (potentially vague) accessibility relation:

\[
(46) \quad \text{Let } X_p \text{ be a pair } <v_0, v>, \text{ where both } v_0 \text{ and } v \text{ are sets of properties, every property } v \in v_0 \text{ is directly supplied by context, } v_0 \subseteq v. \text{ Let } B_{<<S,Q,w>>} \text{ be a set of blocking properties (as in (39) above):}
\]

a. \( |v \cap P \text{ in } c| \) is not significantly smaller than \( |v_0 \cap P \text{ in } c| \), (abnormality)

b. If \( b \in B_{<<S,Q,w>>} \) then \( b^\prime \in v - v_0 \) (relevant abnormality)

Notice that unlike K&L’s definition, the second member of the pair \(<v_0, v>\) is a set of properties, and not a set of sets of properties, i.e. the restriction is not explicitly defined as vague. Nonetheless, it indirectly comes out as vague, with no need to stipulate vagueness, as in K&L’s theory. The reason is that, given how the abnormality constraint is defined, the restriction can potentially contain various combinations of properties of the majority, and there is no unique set of properties which is chosen (as discussed above). Moreover, the dependency of (46) on the in-virtue-of property S (through the definition of relevant abnormality in (46b)) guarantees that it correctly comes out vaguer with descriptive generics than with in-virtue-of ones. Whereas in the latter the only source of vagueness is the vague extension of \( B_{<<S,Q,w>>} \), (i.e. which properties are considered complements of “blocking properties” and which do not), in the former it is also the choice of what \( B_{<<S,Q,w>>} \) is in the first place, since we have complete vagueness w.r.t. the choice of S.
5. Concluding remarks and comparisons with other exceptions tolerance mechanisms

In this paper I showed that, despite the strong similarities between them, IS and BP generics differ in the degree to which the properties of their legitimate exceptions can be specified. I argued that this contrast is a special case of a much wider and deeper difference between IS and BP generics, namely a difference in the accessibility relations, which is also manifested in felicity differences between them (originally observed in e.g. Lawler 1973). I developed an improved version of the exceptions-tolerance mechanism for generic sentences suggested in Kadmon & Landman (1993) to account for the newly observed difference, namely a restriction on the set of individuals quantified by Gen, which is partially vague to two degrees using supervaluationist methods. These two degrees of vagueness are not stipulated but follow from the systematic dependency of this restriction on the two types of accessibility relations that IS and BP generics are compatible with, which are redefined here as precise and vague restrictions on the domain of worlds.

The theory developed here has much in common with intuitions of other theories proposed in the genericity literature. I want to finish this paper by evaluating the success of the present theory to formally capture two such intuitions, relative to these other proposals.

Like many other theories of genericity, the present theory attempts to capture the intuitive observation that the exceptions to generics are somehow abnormal (what I called the abnormality constraint). Unlike the present theory, however, other theories use, in some way or another, the unanalyzed adjective ``(ab)normal'' in their definitions. This, I suggest, is problematic. One type of problems is found with Krifka et al’s (1995) and Krifka’s (1995) well known exceptions tolerance mechanism, in which the quantification over accessible worlds is further restricted to the worlds which are “most normal”, from the point of view of our world. The idea is that in those “most normal” worlds, abnormal things like, mutations or accidents do not exist, so dogs with mutations, or those who have undergone an accident are not quantified over (cf. Delgrande 1987, 1988). However, treating mutations, accidents, etc. as abnormal, is problematic, since a world completely free of such phenomena will be considered truly abnormal from the point of view of our world. A similar problem, noted by, e.g. Cohen (1999), is that, under this proposal A bird
flies circularly means that “every bird flies in all accessible most normal worlds (where among other things, birds fly).”

The reason for these kinds of problems seems to be the fact that “(ab)normality” in Krifka et al’s and Delgrande’s suggestion is total. This is avoided in theories which relativize (ab)normality to the subject property (e.g. w.r.t. being a dog), as in, e.g. Eckardt (1999), Asher & Morreau (1995), Pelletier & Asher (1997). These theories, however, have no way to account for the systematic ability of language users, observed in section 2 above, to distinguish between those abnormal subject members who do, and those who do not count as legitimate exceptions, e.g. for the fact that an individual dog can “abnormal for a dog” (e.g. infertile, or with exceptional problems in his vocal cords), but nonetheless we would expect it to be covered by the generalization “A dog has four legs”.

An intuitively better suggestion may be to relativize abnormality to the VP property, as suggested in circumscription theories like McCarthy (1986) or Drewery (1997) (e.g. requiring the exceptions to be abnormal w.r.t. to having 4 legs). Such a suggestion, however, cannot account for the fact that the characterization of exceptions varies not only with respect material in the sentence (the subject and VP), but also with respect to the accommodated material, as in example (25) above (“A woman in this place doesn’t walk alone outside”). It was shown that considering individuals who are abnormal with respect to being a woman in this town and / or with respect to walking alone outside is not enough, since different types of such abnormal women are considered exceptions to (25) depending on the context in which the generic is uttered, which determines the in-virtue-of factor of the sentence.

The present theory gives more precise content to what “abnormal” means, as far as IS and BP generics are concerned. It defines “abnormal” as “having a property of the minority (of relevant individuals) which blocks the reasonable causation relation between the accommodated, in-virtue-of property and the VP property”. This allows the type of abnormality to vary depending on both material in the sentence, as well as accommodated material, and correctly predicts that when the in-virtue-of factor cannot be accommodated – as in the out of the blue (25), or with unambiguously descriptive generics like (3b), the type of abnormality relevant for legitimate exceptions cannot be specified either, i.e. it is vague.

The present theory also attempts to capture the intuition that generics make claims about the majority of contextually relevant individuals in the subject set. This intuition is
formulated in a simpler and an elegant way in Cohen (1999), who abandons the common idea that generic quantification is universal, and argues instead that its quantificational force is similar to “most”. The meaning of “Dogs have four legs” in this theory is roughly “Most dogs, in all admissible histories (continuing the present history) have four legs”. This has the immediate advantage that there is no need to stipulate any exceptions tolerance mechanism.

There are, however, two main problems with such a move. The first is that this interpretation does not capture at all the widely held abnormality constraint. The exceptional dogs in (1), namely those with no four legs, constitute the minority, but nothing guarantees that they are abnormal in some other sense, relative to those with four legs. The second problem has to do with the observation, made in section 1 above, that taking exceptional entities as counterexamples to generics is evaluated as completely legitimate. I suggest that this can only happen if Gen is indeed universal. If the quantificational force with e.g. (11) (“Professors wear a tie”), was “most”, the cooperative listener would never say something like “but look at Bill, he does not wear a tie!” (as in (12b) above), because she would not expect the quantification to range over all individuals in the first place. That is, if generics had a “most”-like quantifier, we would wrongly expect the listener’s reaction to (12b) to be as infelicitous as the ones in (47b):

(47) a. Most (potential) professors wear a tie
    b. #But look at Bill! He does not wear a tie!

The fact that, unlike (47b), (12b) above is considered legitimate and felicitous, indicates, then, that although many generics indeed make claims about the majority of individuals, the quantificational force of Gen cannot be that of “most”. This is captured in the present analysis by defining Gen as universal, but at the same time restricting the individuals who are quantified over in such a way that no matter which precisification in the restriction is chosen, we end up indirectly quantifying over the majority of (relevant) individuals.

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