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# Genericity and (Non)accidentalness

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## GENERICITY AND (NON)ACCIDENTALNESS

### ABSTRACT

This paper attempts to clarify nature of the “law-likeness” or “nonaccidentalness” that generic sentences are usually claimed to express. It does so by examining the interactions of such generic sentences with a construction which seems to express “accidentalness,” namely the *happens to* construction (as in *John happens not to see well*). In particular, it turns out that generics with bare plural subjects (BP generics, like *Dogs have four legs*), but not generics with indefinite singular subjects (IS generics, like *A dog has four legs*) are compatible with this construction (compare *Dogs happen to have four legs* vs *#A dog happens to have four legs*). I analyze *happens to* as a domain vague necessity operator, *i.e.* a universal quantifier over worlds, whose restriction (the domain of worlds quantified over) is systematically vague. Following Greenberg (2003, 2008) I propose that a number of distributional and interpretational differences between IS and BP generics can be attributed to the fact that although both have the same basic modal quantificational semantic structure the restriction over worlds is necessarily precise in the former kind of generics but is allowed to be vague in the latter. The compatibility of BP generics with *happens to* is thus analyzed as a case of modal concord.

### KEYWORDS

Genericity, nonaccidentalness, vagueness, modality, indefinite singular, bare plural, *happens to*.

## Introduction

In the literature on genericity, characterizing, (or I-) generic sentences are usually assumed to have several core properties: they express **quasi-universal generalizations** (unlike *e.g.* sentences with existential quantifiers), **tolerate exceptions** (unlike sentences with overt universals), express **“long lasting/temporally stable” statements** (unlike temporary or episodic sentences) are **incompatible with contextual restrictions** (unlike sentences with overt quantifiers), and express **nonaccidental, law-like generalizations** (again, unlike sentences with *e.g.* overt *every*). This last property is usually tested by showing that they support counterfactuals, *e.g.* (1a) supports (1b):

- (1) a. Dogs have 4 legs.  
b. If this were a dog, it would probably have 4 legs as well.

However, a closer look at the literature reveals that almost all these core properties have been challenged. First, Cohen (2004) convincingly shows that some generics (as in 2B’s response to 2A) do not express “quasi-universal” statements, but are rather “existential generics.”

- (2) A: Birds lay eggs.  
B: Mammals lay eggs too.

Second, as is well known, there are clear examples of I-generic sentences which do not tolerate exceptions, as in (3):

- (3) a. Dogs are mammals.  
b. Bachelors are unmarried men.

Third, as shown in Greenberg (2003), some generics do not express “timeless” generalizations, but are rather “episodic generics” (notice that they are indeed generic, *e.g.* they tolerate exceptions, support counterfactuals, etc.):

- (4) a. Italian restaurants are closed tonight.  
b. Earthquakes are especially strong today!

Fourth, as illustrated in Condoravdi (1997), Greenberg (2007), along well-known generics like (5), for which contextual restriction is indeed impossible (Krifka (1987) and Krifka *et al.* (1995)), we also find many cases of generics which can be easily contextually restricted. (6) and (7) are examples of such cases:

- (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*”)

- (6) (There are professors and students in this university.) Professors wear a tie. (Can mean “*Professors in this university*”)
- (7) (There are shirts and skirts in this shop.) Shirts cost only 20 NIS. (Can mean “*shirts in this shop*”)

But what about the “nonaccidentalness” of generics? Can this property be challenged as well?

In this paper I would like to take an empirical perspective at this question, by examining the interaction of generic sentences with an expression which seems to express “accidentalness.” There are, in fact, a number of such “accidental” particles and constructions, e.g. *happens to*, *it happens to be the case that*, *accidentally*, *coincidentally*, *by chance*. In this paper I focus on *happens to* (as in *John happens to be in Tel Aviv today*), and in particular on the fact that *happens to* can felicitously combine with generic sentences, as illustrated in (8), and in the naturally occurring examples in (9):

- (8) Dogs happen to have 4 legs
- (9) a. Young children happen to make very good language teachers.<sup>1</sup>  
 b. Newborn babies happen to be extremely sensitive to colors.<sup>2</sup>  
 c. Teenagers happen to be desperate for capital.<sup>3</sup>  
 d. Cats happen to be good swimmers—when the need arises.<sup>4</sup>

At least on the surface, the felicity of such sentences needs to be explained. Intuitively “*x happens to have P*” says that it is accidental that *x* has *P*. For example, a sentence like (10) seems to say that John’s being in Tel Aviv today is accidental.

- (10) John happens to be in Tel Aviv today.

But if this is the case, how can *happen to* felicitously combine with a “nonaccidental” generic? Does such a combination cancel the “nonaccidentalness” of the generic sentences, and hence renders them nongeneric? And what do such sentences mean? Do they express “accidental nonaccidental generalizations”? “Nonaccidental accidental generalizations”? Or perhaps something else?

In the rest of the paper I will attempt to supply answers to these questions. I will argue that sentences as in (8) and (9) are still generic sentences, that their felicity can be explained once the “accidental” flavor of *happens to* as well as the “nonaccidental” nature of generics are correctly and precisely captured,

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1. <http://shikokudays.posterous.com/a-somewhat-regular-day>  
 2. <http://library.thinkquest.org/08aug/01276/colorsandhumans/effectsofcolorsonbabies.html>  
 3. <http://mustsan.info/2011/10/the-greatest-on-the-net-jobs-for-teens/>  
 4. <http://www.cat-lovers-gifts-guide.com/swimming-cats.html>

and more generally that the interaction of genericity and *happens to* can make our understanding of genericity and the accidental/nonaccidental distinction sharper and deeper.

The paper is structured as follows. In section 1 I start with some observations about the interaction between the *happens to* operator and genericity. Section 2 deals with *happens to* in nongeneric statements (*John happens to be in Tel Aviv today/I happen not to see well*). In section 3 I develop a theory of genericity based on Greenberg (2003, 2007), which accounts for the similarities and differences between two types of generic sentences, namely those with indefinite singular and with bare plural subjects, respectively. Section 4 turns back to the interaction between genericity and *happens to* (as in *Dogs happen to have 4 legs*), and attempts to account for the observations in section 2. Section 5 summarizes the main claims in the paper and discusses some general implications.

## 1. Combining generics and happen to: some initial observations

We are interested in sentences like the following:

- (11) a. Dogs happen to have 4 legs.  
 b. Little babies happen to be very cute.  
 c. Cats happen to be independent.

Should such sentences still be considered (I-) generic? The answer seems to be positive, as they have all properties of classical generic statements. First, such sentences express (quasi) universal generalizations. (11c), for example, is clearly a **generalization** about cats, and should not be paraphrased as (12):

- (12) Some cats happen to be independent.

Second, they tolerate exceptions. (11a), for example, will be true even if we find some dogs which do not (happen to) have 4 legs. Most importantly, such sentences still seem to support counterfactuals as well. For example, (11a-c) support (13a-c), respectively:

- (13) a. If this were a dog, it would probably have 4 legs as well.  
 b. If this were a little baby, it would probably be very cute as well.  
 c. If this were a cat, it would probably be independent too.

It is important to notice in this respect that these counterfactuals do not contain the *happens to* operator, *i.e.* (11a-c) support indeed (13a-c), and not (14a-c):

- (14) a. If this were a dog, it would probably happen to have 4 legs as well.  
 b. If this were a little baby, it would probably happen to be very cute as well.  
 c. If this were a cat, it would probably happen to be independent too.

There may be also cases like (14), though. In the context of (15), for example, the generic in (16) may be taken to support the counterfactual in (17) (following an example in Cohen (2001)):

- (15) **Scenario:** *Suppose each and every Supreme Court judge you meet happens to have an odd ID number. Judge Smith happens to have an odd ID number, Judge Brown happens to have an odd ID number, Judge Jones happens to have an odd ID number, etc. At some point, you may conclude that, as strange as it may sound, there is a pattern here, which will probably continue beyond the actual Supreme Court judges.*
- (16) That's really strange! Supreme Court judges happen to have an odd ID number!
- (17) If Bill were a Supreme Court judge, he would happen to have an odd ID number a well.

It seems, then, that generics with *happens to* are still generic. Notice, though, that while this is true for generics with bare plural subjects (BP generics henceforth), as in the ones examined above, *happens to* is not as good or as felicitous in generics with indefinite singular subjects (IS generics, henceforth), as illustrated in the minimally contrasting IS counterparts of (1a-c) in (18a-c):

- (18) a. #/?? A dog happens to have 4 legs.  
 b. #/?? A little baby happens to be very cute.  
 c. #/?? A cat happens to be an independent animal.

This data is supported by results of web searches, in which one can indeed find examples of BP generics with *happen to*, but no similar IS generics.

We are left, then, with several questions: (a) How can the “accidental” *happens to* combine with “nonaccidental” generics? (b) What do BP generics with *happen to* mean (e.g. why do they support counterfactuals without *happen to*)? And (c) Why aren't IS generics compatible with *happens to* as well?

To start answering these questions let us turn now to the semantics of *happens to* in nongeneric, episodic sentences.

## 2. The interpretation of *happens to* in nongeneric sentences

We will be concerned with sentences like (19), (20) and (21):

- (19) Our dishwasher happens to be very noisy.  
 (20) John happens to run very slowly.  
 (21) John happens not to see well.

(21), for example, seems to entail that John does not see well and suggests that this is accidental, *i.e.* it could clearly have been otherwise. Intuitively, such a

statement expresses “the opposite” of a sentence with a necessity modal, *e.g.* (22), where John’s not seeing well is a necessity, which “couldn’t have been otherwise”:

(22) Necessarily, John does not see well.

But, in what way is “accidentalness” as in (21) different from “contingency” as in (23)?

(23) John does not see well.

After all, both (21) and (23) are supposed to give us information which is restricted to the actual set of circumstances (the actual world), and both are different from the modalized (22). We need, then, to capture the effect that the addition of *happens to* has on the interpretation of a contingent sentence, and in attempting to do so several options come to mind.

Perhaps the simplest option is to take a sentence like (21) to mean that John’s not seeing well is restricted to the actual world. That is, that *John does not see well* is true in  $w_0$  and false in all other worlds. We can immediately see, however, that this option is much too strong. Even if we take (21) to be true we can still imagine other possible circumstances, besides  $w_0$ , where John does not see well.

A second option is to assume that (21) means that there is no reason causing John not see well, or at least that no such reason is known to us, *i.e.* that *John does not see well* does not follow from any (known) set of relevant propositions. This option seems to be supported by the infelicity of sentences where such a reason exists and is explicitly stated, as in (24) and (25):

(24) #I can’t go with Mary to the movies. I have a cataract. I happen not to see well.

(25) #The filter in our dishwasher is a bit broken. That’s why the dishwasher happens to be very noisy.

However, consider (26), and (27):

(26) I can’t go with Mary to the movies. I happen not to see well. I have a cataract.

(27) Our dishwasher happens to be very noisy. It’s because the filter is a bit broken.

Crucially, these sentences are fine, and clearly much better than (24)-(25), although the cause for the matrix sentence is known, and even made explicit, though in this case *after* the utterance of the sentence with *happens to*. In fact, we find cases like this with BP generics as well:

- (28) Young adults as well as young children happen to be effortless sufferers mainly because they very easily have confidence in other folks.<sup>5</sup>
- (29) *Teenagers happen to be desperate for capital.* After all, cars and trucks, dates, along with college are usually not going to pay money for themselves!<sup>6</sup>

The felicity of sentences like (26)-(29), then, shows that a sentence with *happens to* does not indicate that “p only in the actual world,” that “there is no reason for p” or even that “there is a reason for p, but it is not known.” Rather it seems to indicate that there is a reason for p, but that it is systematically not specified in the context c to which p is added. That is, the speaker may know or not know this reason, but what is crucial is that prior to the utterance of p the “reason” is not specified/salient in the context.

A direction to make this intuition more precise is to assume that *happens to* is a circumstantial **necessity operator**, with a **vague** accessibility relation. That is, that uttering (21) (*John happens not to see well*) in a context c says that *John does not see well* is true in all worlds where John has a property S, where crucially, in c the choice of S has to be left **vague**, and unspecified. Thus, in any context c where *John happens not to see well* is uttered there are multiple properties S which can be considered the relevant property such that having it will cause/lead John not to see well.<sup>7</sup>

On the surface, this suggestion seems very weird: Our initial intuition about *happens to* was that it expresses the “opposite” of necessity operators like *must/should*. How then can we claim that it is a necessity operator?

The answer to this question is that the semantics of modal operators contains various components. Thus, various operators can be thought of as their “opposite,” when lacking even one of these components. In particular modal operators are usually specified for modal force (so we get the necessity ( $\forall w$ ) vs possibility ( $\exists w$ ) distinction), and for modal flavor (*e.g. epistemic/deontic*), and what is most relevant to our point, they are taken to have

5. <http://kathleenannmontgomery.com/teen-chat-encouraging-online-cha>

6. <http://mustsan.info/2011/10/the-greatest-on-the-net-jobs-for-teens/>

7. In this paper I take properties to be salient or (un)specified in context, following *e.g.* Brennan’s 1993 work on circumstantial modality briefly reviewed below, and represent them using contextually marked variables over properties. More recent work on covert restrictions (*e.g.* Kratzer 2004, 2009, Schwarzschild (2009)), does not use contextual variables of this sort, but rather tools from situation semantics (*e.g.* situation anchors and domain fixing functions). Given this approach, the vagueness of sentences with *happens to* would not result from the indeterminacy with respect to a property (“S”) of the individual denoted by the subject, but rather from the indeterminacy with respect to a situation described by a proposition of the form *John has S* in the context. A similar revision will be relevant for the analysis of descriptive BP generics discussed below. At this stage, however, I will continue to talk about salient vs unspecified properties.



conversational background which is fixed in every context, by explicit “*in view of*” or contextual clues.

Thus, for example, Kratzer (1981) assumes that when  $\alpha$  is an expression of the form *must*  $\beta$ , “a proposition is expressed by an utterance of  $\alpha$ , if there is one, and only one, conversational ground for this utterance” (p. 44). In case several conversational backgrounds are possible, the listener is supposed to accommodate which one the speaker has in mind.<sup>8</sup> This is what happens, for example, in Kratzer’s “trombone” example, where several modal bases are possible:

- (30) *I cannot play the trombone* - In view of my physical condition / my abilities in music / the physical condition of the trombone / the fact that the trombone has sunk in the sea...etc.

Thus, it may well be that *happens to* is felt to be the opposite of *must* because, although it is a necessity operator too, its conversational background *cannot* be specified by the context, and *must* stay vague. Roughly, then: *x happens to P* says that “In all worlds where  $x$  has a property  $S$ ,  $x$  has  $P$ , where  $S$  is unspecified.”

Notice, though, that although  $S$  is unspecified, it cannot be *any* arbitrary property. This is because the choice of  $S$  indirectly defines the accessibility relation (the way the worlds quantified over are similar to the world of evaluation,  $w_0$ ). In particular,  $S$  holds of  $x$  in  $w_0$ . For example, we will take (21) (*John happens not to see well*) to have the truth conditions in (31):

- (31) *John happens not to see well* is true in  $w_0$  in  $c$  iff in all worlds  $w'$  where John has a property  $S$  in a set of properties  $\mathbf{S}$ , John does not see well, where
- (a)  $\forall S \in \mathbf{S}$ :  $S(j)$  is true in  $w_0$ , and
  - (b) for every context  $c$ , the choice of  $S$  in  $c$  remains vague, *i.e.* no specific  $S$  in  $\mathbf{S}$  is chosen over another in  $c$ .

Component (a) makes the accessibility relation “realistic” (in Kratzer’s 1981 terms). Hence, the truth of  $p$  in  $w_0$  follows without stipulation (thus *John happens not to see well* is correctly predicted to entail *John does not see well*). Component (b) says that the choice of  $S$  is vague in  $c$ . Since  $S$  indirectly determines the set of worlds quantified over (“In all worlds where John has  $S$ , for an unspecified  $S$ ), we end up with a vague set of worlds, which, following supervaluationist approaches to vagueness (*e.g.* Kamp (1975) and Fine (1975)), can be modeled as a set of sets of worlds.

8. There are debates about whether this claim is also true for epistemic modals. Some theories assume that these are inherently vague, *e.g.* w.r.t. the identity of the holder of the relevant information (see von Fintel & Gillis (2009), see also MacFarlane (2011)). In our case, however, we propose that *happens to* is a circumstantial modal (see below), whose modal base chooses a specific subset of the facts in the world.

In this sense, *happens to* is similar to Kadmon & Landman's (1993) characterization of Gen as a domain vague operator. But K&L took Gen to be vague over the domain of individuals quantified over, while *happens to* is vague over the worlds quantified over.

Finally, notice that in considering *John happens not to see well* we do not consider all worlds where some (unspecified) *proposition* *p*, true in  $w_0$ , holds, but rather all worlds where John has some (unspecified) *property* *S*, true of him in  $w_0$ . This makes the accessibility relation property level/being about a participant of the event, *i.e.* similar to root, or "circumstantial" modals (*e.g.* Kratzer 1981; Brennan 1993; Hacquard (to appear, (2010)). For example, Brennan (1993) analyzes (32), with circumstantial *may*, as in (33), where the modal base is keyed to some property of Joan:

(32) Joan  $\text{may}_{\text{circumstantial}}$  vote in Racine's mayoral elections.

(33) In virtue of having the property of living in Racine and being registered to vote, Joan  $\text{may}$  vote in Racine's mayoral elections.

There are three motivations for taking *happens to* to have a circumstantial nature. The first has to do with type of reasoning. Hacquard (to appear) summarizes Kratzer's approach to the epistemic/circumstantial distinctions as follows: "Circumstantial modality looks at the material conditions which cause or allow an event to happen; epistemic modality looks at the knowledge state of the speaker to see if an event is compatible with various sources of information available." (p. 18).

In this sense, *happens to* seems to involve (unspecified) circumstantial, and not epistemic reasoning. A sentence like (34), for example, does not seem to be stated "given the evidence":

(34) This tree  $\text{happens to}$  be very tall (not "Given the evidence")

In addition, *happens to* is perfectly compatible with first person pronouns, similar to sentences with circumstantial *must* and *may*, but unlike the epistemic versions of these modals:

- (35) a. John / I  $\text{must}_{\text{circumstantial}}$  /  $\text{may}_{\text{circumstantial}}$  be very happy  
 b. John / # I  $\text{must}_{\text{epistemic}}$  /  $\text{may}_{\text{epistemic}}$  be very happy  
 b. John  $\text{happens to}$  / I  $\text{happen to}$  be very happy.

A second motivation concerns entailments with symmetric predicates. Brennan (1993) claims that since the accessibility relation of root modals (of which "circumstantial" is a subtype) is in the form of a property predicated of the subject (or another event participant, Hacquard (2010)), such modals block entailments with symmetric predicates. In contrast, epistemic modals, with "proposition level" accessibility relations, cannot block such entailments. This is illustrated in (36)- (37), for epistemic and circumstantial *may*:

- (36) **Epistemic *may*: mutual entailment:**
- a. The governor may<sub>epistemic</sub> shake hands with the prisoner.
  - b. The prisoner may<sub>epistemic</sub> shake hands with the governor.
- (37) **Root / circumstantial *may*: no mutual entailment:**
- a. The governor may<sub>deontic</sub> shake hands with the prisoner.
  - b. The prisoner may<sub>deontic</sub> shake hands with the governor.

In this sense, *happens to* behaves like root modals (at least with agentive subjects):

- (38) *Happens to*: No mutual entailment:<sup>9</sup>
- a. The governor happened to shake hands with the prisoner.
  - b. The prisoner happened to shake hands with the governor.

Finally, Hacquard (2010) claims that whereas epistemic modals are relativized to speech time, circumstantial modals are relativized to the tense time:

- (39) a. Mary had<sub>epistemic</sub> to be home.  
 b. ‘Given what I know now, it must be the case that Mary was home then.’  
 c. \*‘Given what I knew then Mary had to be home.’
- (40) a. Mary had<sub>teleological</sub> to take the train.  
 b. ‘Given Mary’s circumstances then, she had to take the train then.’  
 c. \*‘Given Mary’s circumstances now she had to take the train.’

In this sense, too, *happens to* patterns like circumstantial modals:

- (41) a. Mary happened to be on the train.  
 She happened to be on the train then, given (some unspecified) property true of her then.  
 \*She happened to be on the train then, given (some unspecified) property true of her now.

To conclude our discussion until now, *happens to* is a domain vague circumstantial necessity operator. It asserts that something about the denotation

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9. Interestingly, *it happens to be the case* is different, since it does not block the mutual entailments, e.g. (ia) and (b) entail each other:

- (i) a. It happens to be the case that the governor shook hands with the prisoner.  
 b. It happens to be the case that the prisoner shook hands with the governor.

This may be because unlike *happens to*, *it happens to be the case that* has scope over the whole proposition. This, as well as other questions concerning the syntactic and semantic relation between *happens to* and *it happens to be the case that*, e.g. whether the former is a raising construction, will be left to further research.

of the subject leads to the truth of the sentence, but we systematically don't specify what this is (although we may know it).<sup>10</sup>

The question we need to solve now is how can this characterization of *happens to* explain its compatibility with BP generics (those with bare plural subjects) and its incompatibility with IS generics (those with indefinite singular subjects). To understand this we will have to take a close look at the semantics of IS and BP generics.

### 3. The semantics and pragmatics of IS and BP generics

#### 3.1. The similarities and differences between IS and BP generics

We will be concerned with minimal pairs as in (42a) and (42b):

- (42) a. Dogs have 4 legs. / A dog has 4 legs.  
b. Boys don't cry. / A boy does not cry.

The main challenge in the analysis of IS and BP generics is the need to account simultaneously for both the strong similarities and the differences between them. In particular, on the one hand such IS and BP sentences share all the core properties of (characterizing) generics: Both express quasi-universal generalizations, support counterfactuals, and tolerate contextually irrelevant and exceptional entities in a similar way. For example, both do not get a generic interpretation in contexts as in (43) (*cf.* Krifka 1987; Krifka *et al.* 1995), and both are felicitous as generic in contexts as in (44) and (45) (Greenberg (2007)):

- (43) (There are lions and tigers in the cage.) #Lions are / #A lion is dangerous.  
(44) (There are professors and students in this university.) Professors / A professor wear(s) a tie.  
(45) (There are shirts and skirts in this shop.) Shirts / A shirt cost(s) only 20 NIS.

In addition, both types of generics tolerate exceptions in a similar way. For example, in considering both IS and BP sentences in (42a) we take the legitimate exceptions (those which do not falsify the generalization) to be "abnormal" in some sense, *e.g.* dogs which have some mutation, have undergone an accident, etc. (Asher & Morreau 1995; Pelletier & Asher 1997; McCarthy 1986; Drewery 1997; Eckardt 1999).

On the other hand, there have been various observations concerning differences between IS and BP generics. I will focus here on two types of

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10. Notice that I do not explicitly define the relation between S and p as causal. Rather, following *e.g.* Brennan 1993, I derive the relation between S and p by requiring that p holds in all worlds where John has S.

differences. First, the two types of generics are taken to have different “flavors”: IS generics express “analytic,” “definitional,” generalizations, whereas BP generics can express both these, as well as more “descriptive,” inductive generalizations. For example, *A dog has 4 legs* is taken to express a definitional/analytic claim about the number of legs that dogs have, whereas *Dogs have 4 legs* is taken to be “ambiguous”: It can express both this kind of analytic/definitional generalization, as well as a descriptive generalization, typically based on watching many dogs with four legs.

Second, the felicity of IS sentences is considerably more restricted than that of BP generics. Here are three examples: IS, but not BP generics were said to be infelicitous with “nonessential” “accidental” properties (Lawler 1973; Burton Roberts 1977):<sup>11</sup>

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

IS, but not BP sentences are also infelicitous with subjects denoting “extremely unnatural properties,” as illustrated in (47) and (48):

- (47) 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.
- (48) a. A well-known forty-five year old teacher does not cook on Monday afternoons. (odd as generic, fine as existential)  
b. Well-known forty-five year old teachers do not cook on Monday afternoons.

Finally, IS, but not BP generics are infelicitous with episodic predicates, as illustrated in (49) and (50):<sup>12</sup>

- (49) Italian restaurants are closed tonight. / Earthquakes are especially strong today.

11. In fact, the term “nonessential” or “accidental” is not precise, as there are many felicitous IS sentences with such properties, e.g. (i), or (ii), which is false, but felicitous (see Greenberg 2003 for discussion. See also section 3 below):

- (i) A refrigerator costs about \$1000  
(ii) A dog has 3 legs

12. A further observation is that IS and BP also differ in the degree to which the exceptions can be specified (Greenberg 2007). This observation was analyzed in Greenberg 2007 using two constraints on Kadmon & Landman’s 1993 domain vague restriction on Gen, and eventually led to the suggestion, reviewed below, that the vagueness of Gen concerns the restriction over worlds, and not the restriction over individuals. Going into this topic, however, is beyond the scope of this paper.

- (50) #An Italian restaurant is closed tonight.<sup>13</sup> / # An earthquake is especially strong today.

### 3.2. A semantics for IS and BP generics and an intuitive explanation of their distinct interaction with *happens to*

There are various attempts to explain the IS/BP puzzle, *e.g.* Dobrovie Sorin & Laca 1996; Cohen 2004; Greenberg 2003, 2007; Mari 2008; Krifka (to appear). Most of these approaches attempt to account for the differences by assigning IS and BP generics two completely distinct representations. The disadvantage of this approach is that the strong similarities between the two types of generics are not (naturally) accounted for. In this paper I will concentrate on Greenberg's (2003, 2007) approach which attempts to account simultaneously for the similarities and differences between IS and BP generics by assuming that they have the same basic (quantificational, modal) semantic structure, but are compatible with two different accessibility relations, expressing two types of "law-likeness."

In particular, both IS and BP sentences are taken to have the same basic semantic structure in (51):<sup>14</sup>

- (51)  $\forall w'$  [ $w'$  is appropriately accessible from  $w_0$ ]  $\rightarrow$  [ $\forall x$   $P^{\text{cont.norm.}}(x, w') \rightarrow Q(x, w')$ ]  
 "In worlds accessible from  $w_0$ , every contextually relevant and "normal" P individual is also a Q individual" (*cf. e.g.* Krifka *et al.* 1995 ; Chierchia 1995)

This structure accounts for the similarities noted above: The universal quantifier over individuals accounts for the "generalization over individuals" component. The universal quantifier over worlds accounts for the basic "nonaccidentalness" and counterfactual supporting property of such generics. The restriction (contextually relevant and "normal") on the nominal P-property, accounts for the tolerance to contextually irrelevant and "abnormal" P entities.<sup>15</sup>

What distinguishes IS and BP sentences is their distinct compatibility with the accessibility relation restricting the quantification over worlds. But there are, in fact, two ways to think about this difference.

13. This sentence can only be felicitous if "tonight" is interpreted functionally, as *e.g.* "the night in which Italy's independence day occurs". For the BP counterpart no such functional interpretation is needed. The sentence can be felicitous even if there is no special information about "tonight".

14. For simplicity I disregard here quantification over situations / eventualities.

15. The restriction "normal" on the P property is used here in an intuitive sense. See Greenberg 2007 for a more detailed discussion of the content of this restriction.

Given Greenberg (2003), the difference lies in whether or not there is an “*in virtue of*” property restricting the accessibility relation. According to this approach, IS generics can only express “*in virtue of*” generalizations, roughly asserting that in all worlds where every P individual has the “*in virtue of*” property, every (relevant and normal) P individual has the Q property. In contrast, BP generics can also express “descriptive” generalization, merely stating that “there is a pattern here,” with no “*in virtue of*” property in the semantic structure.<sup>16</sup>

In Greenberg (2007), on the other hand, I took the difference to lie in whether an “*in virtue of*” property is specified or left vague. According to this approach, *both* IS and BP generics express “*in virtue of*” generalizations. With both we assume that Ps are nonaccidentally Qs in virtue of something about P. But whereas with IS generics, such an “*in virtue of*” property is taken to be “associated” with P (given shared knowledge/stereotypes/norms), and is salient/specified in the context of utterance, with BP generics we can rely on inductive inferences, based on observations in  $w_0$ , and thus we do not/cannot specify what this property is, and it is left vague. Thus, BP sentences can roughly assert that all (relevant and normal) Ps are Qs in virtue of something about P, which is left vague.

Before examining these two options more closely, let us turn back briefly to observation, made above, that BP, but not IS generics are compatible with *happens to* (*Dogs happen to/# A dog happens to have 4 legs*). Given both Greenberg (2003) and (2007), we can now sketch a potential explanation for this observation: We suggested above that *happens to* is a domain vague (circumstantial) modal operator (“There is a property, true of the denotation of the subject, which causes it to have Q, but we don’t specify it”). This is incompatible with IS generics, where the “*in virtue of*” property is systematically salient/specified, but is compatible with BP generics which allow no specification of the “*in virtue of*” property, either because it does not exist in the semantic representation (Greenberg (2003)), or because it exists but is systematically left unspecified/vague (Greenberg (2007)).

Let us have now a closer look at the truth conditions of IS and BP sentences. This will enable us, in section 4, to explain the distinct interaction of these two types of generics with *happens to* in a more precise way.

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16. This approach was found to be productive for analyzing middle cross linguistically (Lekakou (2005)), Polish aspectual system (Klimek-Jankowska (2008)), and genericity in Brazilian Portuguese (Muller (2003)). See also Prasada & Dillingham (2006, 2009) for potential experimental results supporting the distinction between “*in virtue of*” and “descriptive” generics.

### 3.3. A closer look at the different truth conditions of IS and BP generics in Greenberg (2003, 2007)

We will start by examining the semantics of IS sentences more closely. Given both Greenberg (2003) and (2007), such sentences necessarily express “*in virtue of*” generalizations. For example, *A dog has four legs* or *A boy does not cry* necessarily assert that the generalization that “*Every (relevant and normal) P individual has Q*” is true in virtue of a certain property that every P member is assumed to have (e.g. “*having a four legged genetic makeup*” or “*being tough*”). Following Brennan’s (1993) approach, we quantify over all worlds in which every P member has a contextually salient property,  $S_C$ , as in (52):<sup>17</sup>

- (52)  $\forall w[\forall x P(x,w) \rightarrow S_C(x,w)] \rightarrow [\forall x P^{\text{cont.norm.}}(x,w) \rightarrow Q(x,w)]$  (“In all worlds where all Ps have a contextually supplied property  $S_C$ , all contextually relevant and normal Ps have Q”)

Since the “*in virtue of*”  $S_C$  property determines the way the worlds quantified over are similar to the actual world  $w_0$ , it cannot be any arbitrary property. In particular, it is constrained by two “actual world” requirements. The first, dictates that  $S_C$  should be associated with P in  $w_0$ . This holds iff  $\forall x P(x) \rightarrow S(x)$  follows from known facts, norms, stereotypes, etc. in  $w_0$ , *i.e.* iff this universal statement holds in all worlds which are epistemically or deontically or stereotypically, etc, accessible from  $w_0$ . Among other things, this requirement accounts for the incompatibility of IS sentences with “extremely unnatural properties,” as in (53):

- (53) #A Norwegian student whose name ends with “s” or “g” wears thick green socks.

Properties like being a Norwegian student whose name ends with “s” or “g” are considered “extremely unnatural” precisely because we do not associate any (nontrivial) properties with them, *i.e.* because given the general knowledge/stereotypes/norms, etc. we do not impute to them “sufficiently regular” behavior (using Chierchia’s (1998) phrasing). Thus, since the “*association with P*” requirement fails, IS sentences with subject denoting such properties are infelicitous.

The second requirement on  $S_C$  is that this property should be taken in  $w_0$  to be a reasonable causer for properties “*of the sort*” of Q. This requirement is imposed in order to distinguish between false-but-felicitous IS generics like (54a) and infelicitous ones like (54b):

17. See again footnote 7 concerning the position that domain restrictions do not contain “salient” properties, but anchor situations.



- (54) a. A dog has 3 legs.  
 b. #A man is blond

Both being a dog and being a man are “natural” properites. I.e. we associate (nontrivial) properties with both of them. However, although no property associated with being a dog is taken to reasonably cause having 3 legs, there is such a property which causes a property of this sort, *i.e.* which causes a having a certain number of legs (specifically, having 4 legs). In contrast, none of the properties associated with being a man is taken to be a reasonable causer for a specific hair color (a property of the “*sort of*” being blond). Formally, a property  $S$  is taken to cause “*sort of*” a property of  $Q$  iff there is good possibility, from the point of view of  $w_0$ , that  $[\forall x S(x) \rightarrow Q(x)] \vee [\forall x S(x) \rightarrow \neg Q(x)]$ , or put differently, if there is a good possibility that  $\forall x S(x) \rightarrow Q'(x)$  holds, for some  $Q' \in \text{ALT}Q$  (*cf.* Cohen (2001; 2004)).

Turning now to BP sentences, in Greenberg (2003) I proposed that unlike IS sentences, these can express both “*in virtue of*” as well as “descriptive” generalizations, with **no** “*in virtue of*” property. In this descriptive reading (typically a result of an inductive inference) such sentences merely assert that “there is a pattern here,” *i.e.* that the generalization is not limited to the actual  $P$  members, but expected to hold also for  $P$  members in nonfactual circumstances which are similar to ours (where “similarity” is vague, *cf.* Lewis (1973)). This is captured in (55):

- (55)  $\forall w' [w' \in \{w_0\} \cup \{w' : w' R_{\max} w_0\}] \rightarrow [\forall x P^{\text{cont.norm.}}(x, w') \rightarrow Q(x, w')]$   
 “In all worlds in the union set of  $w_0$  and the set of worlds which are maximally similar to  $w_0$  (except for what is needed to allow for the existence of different or nonactual  $P$  members) every contextually relevant and normal member of  $P$  has  $Q$ ”

In Greenberg (2007), on the other hand, I made a preliminary suggestion according to which all (I-) generics say that the generalization holds “*in virtue of*” some property of  $P$ . The idea here is that whenever we say that a generalization of the form “*Ps are Qs/A P is a Q*” is nonaccidental, this is because we think there is something about  $P$  which leads to  $Q$ . Thus, even when we say *Norwegian students whose name end with “s” or “g” wear thick green socks* we believe that there is something about such Norwegian students which makes them wear thick green socks. Given this idea, the structure of *all* (I-) generics will be as (56):

- (56)  $\forall w' [\forall x P(x, w') \rightarrow S(x, w')] \rightarrow [\forall x P^{\text{cont.norm.}}(x, w') \rightarrow Q(x, w')]$   
 (“In all worlds where all  $P$ s have  $S$ , all contextually relevant and normal  $P$ s have  $Q$ ”)

Under this approach the difference between IS and BP generics lies in two points regarding the “*in virtue of*”  $S$  property:

The first point concerns the relation between the “*in virtue of*” property (S) and the nominal property (P): With IS sentences, S is “associated” with P in  $w_0$ , *i.e.* the claim that all Ps have S should follow from known facts/stereotypes/norms etc. we have in  $w_0$ . In contrast, with BP sentences no such “association” is needed. Thus, for example, when uttering *Norwegian students whose name end with “s” or “g” wear thick green socks* we assume that there is something that all Norwegian students whose name ends with “s” or “g” have in  $w_0$  and that it is this property which leads to wearing thick green socks. Crucially, however, this does not follow from an existing, shared body of knowledge, stereotypes or norms. That is, there is no guarantee that it holds in other worlds which are epistemically, deontically, stereotypically, etc. accessible from  $w_0$ . The same holds also for BP sentences like *Barns are red*, or even for *Boys don’t cry* under the descriptive reading. Thus, in all BP sentences expressing descriptive generalization, we assume that the generalization holds due to a property that all of P members have in the actual world.

The second point concerns the specificity/vagueness of S (and can be perhaps derived from the previous point, see next subsection): With IS sentences, the speaker has the “*in virtue of*” S property in mind, and the listener is supposed to accommodate it. In many cases such a property is easy to accommodate, as it exists in the shared body of knowledge/norms/stereotypes. In other cases we need explicit contextual support in order to give the value of S. This is what happens in cases like (57):

- (57) 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...)

Here there are several potential “*in virtue of*” properties. But in uttering such a sentence in a context *c*, the assumption is that the speaker has one such “*in virtue of*” property in mind, and the listener is supposed to accommodate it, in a very similar way to what happens with Kratzer’s *I cannot play the trombone* example.

In contrast, in uttering a BP sentence, no S property needs to be specified. *E.g.* one can utter (58) as a purely descriptive generalization:

- (58) Accountants in this place hardly pay taxes.

Under the descriptive reading (58) says that “All (normal) accountants in this place hardly pay taxes in virtue of some unspecified property they have in the actual world.” Consequently, the listener is not supposed to accommodate a specific “*in virtue of*” property.

To summarize, given Greenberg (2007) approach, IS sentences have the semantic structure in (59), whereas BP sentences can have both structures in (59) and in (60):

- (59)  $\forall w' [\forall x P(x, w') \rightarrow S_c(x, w')] \rightarrow [\forall x P^{\text{cont.norm.}}(x, w') \rightarrow Q(x, w')]$   
 Requirements:  
 a. There is good possibility in  $w_0$  that  $[\forall x S(x) \rightarrow Q(x)] \vee [\forall x S(x) \rightarrow \neg Q(x)]$   
 b.  $\forall w' wR_{\text{epistemic / normative / stereotypical}} w_0 \rightarrow [\forall x P(x, w') \rightarrow S_c(x, w')]$ , where S is salient in the context c  
 “In all worlds where every P individual has a **contextually salient property S**, every relevant and normal P individual has Q” —  
 Where (a) S is taken in  $w_0$  to be a reasonable causer for properties of the sort of Q and (b) “*Every P individual has S*” follows from a set of known facts / norms / stereotypes in  $w_0$ .
- (60)  $\forall w' [\forall x P(x, w') \rightarrow S \in \mathbf{S}(x, w')] \rightarrow [\forall x P^{\text{cont.norm.}}(x, w') \rightarrow Q(x, w')]$   
 Requirements:  
 a. There is good possibility in  $w_0$  that  $[\forall x S(x) \rightarrow Q(x)] \vee [\forall x S(x) \rightarrow \neg Q(x)]$   
 b.  $\forall S S \in \mathbf{S} \rightarrow \forall x P(x, w_0) \rightarrow S(x, w_0)$   
 “In all worlds where every P **individual has S**, a **property in a set of properties S (not specified in c)**, every relevant and normal P individual has Q” —  
 Where (a) S is taken in  $w_0$  to be a reasonable causer for properties of the sort of Q and (b) All properties S in **S** hold of every P member in  $w_0$ .

Thus, on the descriptive reading of BP sentences, we end up with Gen whose restriction over worlds is vague: There are multiple sets of worlds that the universal quantification can range over, namely those in which “*every P has S*” holds, for the different choices of S.

### 3.4. The source of the difference between IS and BP generics

Assuming that indeed IS and BP generic sentences differ in their compatibility with the structure in (59) and (60), we still need to explain how these two different semantic structures can be derived from the different semantics of the IS and BP subjects. A direction to answering this question can be based on Krifka’s (to appear) insight according to which “When expressing a generalization based on a count noun, speakers have a choice between indefinite singulars (predicates that apply to atomic entities), and bare plurals (predicates that apply to sum individuals).”

Krifka uses this difference to argue that BP sentences can make generalizations about the world, whereas IS ones can make “definitional” generalizations, about interpretation of linguistic expressions. However we may try and use this insight to account for the difference in the compatibility of IS and BP generics with the structures in (59) and (60) above.

In particular, suppose IS generics are indeed based on statements which are true for a singular individual. How can we move from considering a singular individual to a generalization? Intuitively, we can only do that if we already

assume that having the nominal P property means exhibiting sufficiently regular behavior (similar to what Chierchia (1998) claims w.r.t. kinds), that is, if we already have some assumptions: knowledge/stereotypes/laws, etc. concerning this nominal property, *i.e.* if we **associate** other (nontrivial) properties with it.

If, on the other hand, P is taken to be “unnatural” in that we do not take it to exhibit regular behavior, *i.e.* we do not associate other properties with it, or if no property associated with P is a reasonable causer for one of the alternatives of the Q properties, then we won’t tend to express a generalization (“*all (normal) Ps are Qs*”) based on considering a single individual. Thus, in stating IS generics, an “*in virtue of*” property is typically one which is already present and salient in the context of utterance.

In contrast to IS sentences, given Krifka’s idea, BP generics are based on considering pluralities (sum individuals). Thus, they can also express “descriptive” generalization, based on purely inductive inferences: observing several instances with P property having the Q property, and claiming that “there is something about having P which leads to having Q.” Crucially, in such cases we can make a generalization even if we didn’t assume before considering the members of P, that P manifests a “sufficiently regular behaviour,” *i.e.* even if we do not already associate (nontrivial) properties with this P. Hence no S is presupposed to be associated with P, and to be present/salient in the common ground. So, S can remain vague.

Typically, then, with BP sentences whose IS counterparts are infelicitous (*Barns are red/Norwegian students whose name ends with “s” or “g” wear thick green socks*), and which are thus unambiguously descriptive, the “*in virtue of*” S property is not salient in the context to which the sentence is added, and hence remains vague, so we end up with multiple possibilities for what S is, and hence with multiple sets of worlds quantified over.

#### 4. Back to *happens to* with IS and BP generics

We are now in a position to turn back to the interaction between *happens to* and generic sentences. We start from considering the felicity and interpretation of BP generics with *happen to*, illustrated again in (61):

- (61) a. Dogs happen to have 4 legs  
 b. Barns happen to be red  
 c. Norwegian students whose name ends with “s” or “g” happen to wear thick green socks

Above we stated the accessibility relation of “descriptive” reading of BP generics and of *happens to* in very similar terms. In particular, the semantics of *John happen to Q* (as in *John happens not to see well*) is schematically

given again in (62), and the two potential semantic structure of BP generics are schematically given in (63a) and (63b) respectively:

- (62) John happens to Q:  
 $\forall w' [S \in \mathbf{S} \wedge S(j, w')] \rightarrow Q(j, w')$   
 where  $\forall S \in \mathbf{S}, \rightarrow S(j, w_0)$  where no specific S is chosen in c,
- (63) a.  $\forall w' [\forall x P(x, w') \rightarrow S_c(x, w')] \rightarrow [\forall x P^{\text{cont. norm.}}(x, w') \rightarrow Q(x, w')]$   
 (“In all worlds where every P member has S—a **contextually salient property associated with P**—every (relevant and normal) P member has Q”)
- b.  $\forall w' [\forall x P(x, w') \rightarrow S \in \mathbf{S}(x, w')] \rightarrow [\forall x P^{\text{cont. norm.}}(x, w') \rightarrow Q(x, w')]$   
 (“In all worlds where every P member has S—a **property true of every P in  $w_0$  which is unspecified in c**—every (relevant and normal) P member has Q”)

Sentences like (61a-c) result from an interaction between the semantics of *happens to* in (62), and the “descriptive” reading of Gen in (63b). In such a case, there are, in fact, three potential ways for the two operators to interact: (A) Stacking of *happens to* above *Gen*, (B) Stacking of *Gen* above *Happens to* and (C) Modal concord. Examining these options we will see now that option A is problematic, option B is possible, though not very plausible, and option C is the most plausible and non-problematic. Let us examine each such case more closely:

Option A, **stacking of *happens to* above *Gen*** is illustrated in (64):

- (64) Happens to (Dogs have 4 legs)  
 $\forall w' \text{ s.t. } S' \in \mathbf{S} \text{ holds of } \dots?$   
 $w' \in \forall w'' [\forall x P(x, w'') \rightarrow S' \in \mathbf{S}(x, w'')] \rightarrow [\forall x \text{ dog}^{\text{cont. norm.}}(x, w'') \rightarrow \text{has 4 legs}(x, w'')]$

Notice that in the generic statement, the universal quantification over individual dogs (in boldface) is under the scope of the universal quantification over worlds. Hence it is not clear that the unspecified  $S'$  property introduced by *happens to* can have access to the individual variable, and be predicated of individual dogs. It seems, then, that this option does not yield a felicitous structure.

Option B, **stacking of *Gen* above *Happens to***: seems possible, but quite restricted. Intuitively it yields the reading that “In virtue of (an unspecified) S true of Ps, every P happens to be Q.” This is suitable, for example, in the scenario described in section 1 above, where we meet several Supreme Court judges, each of them happens to have an odd ID number. At some point we can conclude that a general property of Supreme Court judges (which holds of them in virtue of some property that they have) is that each of them happens to have an odd sID number. This is illustrated in (65) and (66):

- (65) Supreme Court judges [happen to have an odd ID number]
- (66)  $\forall w[\forall x \text{ SCJ}(x, w) \rightarrow S \in \mathbf{S}(x, w)] \rightarrow$   
 $[\forall x \text{ SCJ}^{\text{cont. norm.}}(x, w) \rightarrow [\forall w' S' \in \mathbf{S}(x, w') \rightarrow \text{has an odd ID number}(x, w')]]$

This is paraphrased as in (67), and yields the counterfactual in (68):

- (67) “In all worlds where every individual Supreme Court judge has (an unspecified property) S, every contextually relevant and normal Supreme Court judge is s.t. in all worlds where such a judge has (an unspecified property) S', it has an odd ID number”<sup>18</sup>
- (68) If this were a Supreme Court judge, it would happen to have an odd ID number too.

However, in section 2 above we saw that in the normal case, the counterfactuals that BP generics with *happens to* support are standard counterfactuals (**without happens to**). For example, (69) naturally supports (70) and not (71):

- (69) Dogs happen to have 4 legs.
- (70) If this were a dog it would (probably) have 4 legs too.
- (71) If this were a dog it would (probably) happen to have 4 legs too.

I propose that we get such standard counterfactuals because the salient reading of *happens to* + *Gen* is not a stacked reading, as in options B and C, but a **modal concord** reading.

In general, modal concord readings (*e.g.* Geurts and Huitink 2006; Anand & Brasoveanu 2010) occur where a modal adverb modifies another modal operator (often a modal auxiliary), with the same modal force (necessity/possibility) and the same “modal flavour” (*e.g.* epistemic, deontic etc.). In such cases we can (and sometimes must) get an interpretation as though there is, in fact, only one such modal operator, instead of two. (72) illustrate such a reading. In (73) the modal concord reading is blocked since the modal flavor of the adverb and modal auxiliary do not match:

- (72) We can<sub>Deontic</sub> legitimately<sub>Deontic</sub> deny your request.
- (73) #John might<sub>Epistemic</sub> legitimately<sub>Deontic</sub> be home<sup>19</sup>

18. Notice that this reading is correctly predicted not to work with IS generics: There is no property associated in  $w_0$  with being a Supreme Court judge, which can be taken as a reasonable causer in  $w_0$  of a property of the sort of “*happens to have an odd social security number*” (*cf.* #*A man is blond*).

19. Anand & Brasoveanu (2010), examples (2a) and (2b).

There have been various ideas about how such concord readings are derived (see Anand & Brasoveanu (2010) for an overview). In this paper I will adopt Anand & Brasoveanu's own suggestion that when the modal adverb modifies the modal auxiliary, they both apply to the same matrix proposition, as in (74):

$$(74) \quad [\text{adverb modal}]_{(\text{f}_{\text{modal base}})}(\text{p})=1 \text{ iff } [\text{adverb}]_{(\text{f})}(\text{p})=1 \text{ and } [\text{modal}]_{(\text{f})}(\text{p})=1$$

Anand & Brasoveanu further propose that the redundancy created by using the same kind of modal quantification twice on the same proposition leads to strengthening of the modalized statement. For example, (72) seems stronger than *We can deny your request*.

We can now turn back to the interaction between *happens to* and Gen (as in *Dogs happen to have 4 legs*). Given our analysis of *happens to* and of “descriptive” Gen, here we can get modal concord as well. This can be seen clearly when we decompose Gen into a universal quantifier over accessible worlds which has in its scope a universal statement over individuals. In such a case, *happens to* and the modal part of Gen have the same modal force (universal), and the same modal flavor/accessibility relation: a domain vague circumstantial operator, (“In virtue of an unspecified property”). Both these modal operators apply to the same matrix proposition, namely to the universal statement over individuals (“All (relevant and normal) P individuals have Q”). This is schematically illustrated in (75), and more specifically for *Dogs happen to have 4 legs* in (76):

$$(75) \quad [\text{Happens to Gen}_{\text{w}}]_{(\text{F}_{\text{modal base}})}(\forall x \text{ P}^{\text{cont.norm.}}(x) \rightarrow Q(x)) = 1 \text{ iff} \\ \text{Happens to}_{(\text{F}_{\text{modal base}})}(\forall x \text{ P}^{\text{cont.norm.}}(x) \rightarrow Q(x)) = 1 \text{ and} \\ \text{Gen}_{\text{w}}_{(\text{F}_{\text{modal base}})}(\forall x \text{ P}^{\text{cont.norm.}}(x) \rightarrow Q(x)) = 1$$

$$(76) \quad \forall w[\forall x \text{ dog}(x, w') \rightarrow S \in S(x, w')] \rightarrow [\forall x \text{ dog}^{\text{cont.norm.}}(x, w') \rightarrow \text{has 4 legs}(x, w')] \wedge \\ \forall w[\forall x \text{ dog}(x, w') \rightarrow S \in S(x, w')] \rightarrow [\forall x \text{ dog}^{\text{cont.norm.}}(x, w') \rightarrow \text{has 4 legs}(x, w')]$$

This kind of proposal can account for the following facts. First, *Dogs happen to have 4 legs* supports *If this were a dog it would have 4 legs as well* (without *happens to*). This is because there is eventually only one modal quantifier operating in this structure. Notice that this modal has to be  $\text{Gen}_{\text{w}}$  (and not *happens to*) since the universal-over-individuals structure is only introduced because of Gen.

Second, IS sentences are infelicitous with *happens to*, since no modal concord can occur. In such a case the semantic structure of *happens to* in (62) above interacts with the version of Gen in (63a). Although the modal force is the same (universal), the two operators have a different flavor (accessibility relation): *Happens to* requires an unspecified S property, while Gen with IS generics requires a specified and salient S property. Notice that, to the extent that this modal concord analysis is correct, this indicates that the modal flavors

restrictions on modal concord are more fine-grained than the ones assumed in the literature (which concentrate on deontic/epistemic kinds of distinctions).

Third, when applied to BP sentences whose IS counterparts are felicitous (*Dogs have 4 legs*), *happens to* disambiguates these sentences, turning them into descriptive only, and their “definitional”/“analytic”-like flavor disappears. This is, again, since modal concord is blocked for the nondescriptive reading (which uses a specified and associated S property).

Finally, as with other cases of modal concord, the effect of *happens to* on BP generics can be seen as strengthening: For example, the “descriptive/inductive” nature of *Barns happen to be red* is stronger than that of *Barns are red*.

## 5. Summary

The claims made in this paper about the semantics of *happens to*, of IS and BP generics, and about their interactions can be now summarized as follows:

- a. ***Happens to***: We proposed that *happens to* is a necessity circumstantial operator with a vague accessibility relation (*i.e.* a vague set of worlds quantified over).
- b. **Generics**:
  - i. We looked at the idea that both IS and BP generics express “*in virtue of*” generalizations: In both we say “All Ps have Q in virtue of something about P.”
  - ii. More formally, given this idea, both IS and BP generics can be thought of as generalizations over individuals (and situations) in the scope of a necessity circumstantial operator (a universal quantifier over worlds where every P member has an “*in virtue of*” property S).
  - iii. The difference between IS and BP generics lies in whether the “*in virtue of*” S-factor is “associated” with the P property or not, consequently, in whether it is salient/specified in the context of utterance (for IS generics) or can remain unspecified and vague.
  - iv. Following ideas in Krifka (to appear), we hypothesize that the difference between IS and BP sentences results from the fact that the conditions for deriving a nonaccidental generalization based on predication of a singular individual (as with IS generics) are tighter than when based on predication of plural individuals. In particular, former kinds of generalizations are only justified if there is already enough background knowledge concerning general patterns true of the singular property.



- c. ***Happens to + Generics:*** *happens to* and the modal component of  $\text{Gen}_{\text{descriptive}}$  express the same modal operation: with the same modal force and “flavour.”
- i. We thus assumed that the salient interpretation of BPs *happen to be Q* results from modal concord.
  - ii. No such reading is possible for IS generics, since the vagueness of S in the accessibility relation of *happens to* and the specificity of S in the accessibility relation of Gen of IS sentences clash and block the concord reading.

The analysis presented in this paper has more general implications towards the understanding of the assumed “nonaccidentalness” property of (I-) generics. In the genericity literature one often finds the claim that generic sentences express nonaccidental generalizations. While I strongly believe that this claim is correct, I think it is in fact used to capture two distinct ideas. First, one can use this claim to merely say that generic sentences assert that a certain generalization is not accidental, *i.e.* that this generalization is not limited to the actual set of circumstances (the actual world), but is expected to be true in other potential circumstances (other possible worlds) as well. A second, stronger, use of this claim is that generic sentences “reflect” nonaccidental generalizations, *i.e.* report nonaccidental patterns, which are already marked as law-like in the common ground.

Interestingly, these two uses of the claim that “generics express nonaccidental generalizations” are manifested with two different linguistic constructions: The first use corresponds to the semantics of BP generics under the “descriptive” reading: Here we merely assert that the a generalization is nonaccidental. The second use correspond the semantics given in this paper to IS generics: they felicitously assert that a certain generalization is true only if this generalization is of the sort which can be plausibly derived from knowledge, norms or stereotypes of existing patterns.

In the beginning of the paper we asked whether the felicitous interaction of BP generics and *happens to* indicates that “nonaccidentalness” should not be considered anymore a core property of (I-) generics. Given our discussion so far, the answer to this question seems negative. A sentence with *happens to* does not say that a statement is accidental, only that the “in virtue of” property behind it is unspecified, or left vague. Descriptive generics convey a similar type of information. Combined with *happens to*, then, descriptive generics do not become ‘accidental’. Rather they continue to assert that the generalization they express is nonaccidental (as in the first use of the claim above), and the vagueness/indeterminacy of the “in virtue of” property is only strengthened.

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#### RÉSUMÉ

Cet article entreprend de clarifier la nature de la «*law-likeness*» ou «non-accidentalité» qu’expriment, selon l’opinion courante, les phrases génériques. Pour ce faire, il examine les interactions des ces phrases génériques avec une construction qui semble exprimer «l’accidentalité», à savoir la construction en *happens to* (comme dans *John happens not to see well*, fr. *il se trouve que John ne voit pas bien*). En particulier, il s’avère que les génériques avec un sujet pluriel nu (génériques BP, comme *Dogs have four legs*, fr. *les chiens ont quatre pattes*), mais pas les génériques avec un sujet indéfini singulier (génériques IS, comme *A dog has four legs*, fr. *un chien a quatre pattes*), sont compatibles avec cette construction (cf. *Dogs happen to have four legs vs #A dog happens to have four legs*). J’analyse *happens to* comme un opérateur de nécessité à domaine vague, c’est-à-dire un quantificateur universel sur les mondes dont la restriction (le domaine de mondes sur lequel opère la quantification) est systématiquement vague. À la suite de Greenberg (2003, 2008), je propose qu’un certain nombre de différences distributionnelles et interprétatives entre les génériques IS et BP peuvent être attribuées au fait que bien que les deux ont la même structure sémantique quantificationnelle modale de base, la restriction des mondes est nécessairement précise dans le premier type de génériques, alors qu’elle peut être vague dans le second. La compatibilité des génériques BP avec *happens to* est ainsi analysée comme un cas de concordance modale.

#### MOTS-CLÉS

Généricité, non-accidentalité, vague, modalité, indéfini singulier, pluriel nu, *happens to*.

