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On Indefinite Singular Generics

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Abstract

Consider a simple statement like *A dog has four legs*, which, under a generic reading, is an example of an *Indefinite Singular (IS) generic*. Different varieties of generics are differentiated by their subject nominal type; for instance, English has both the indefinite singular and bare plural (BP) generic (e.g. *Dogs have four legs*). Crucially, IS generics have a more limited distribution than their BP counterparts. A myriad of theories have been posited to explain this, characterizing IS generics as expressing, *inter alia*, “rules and regulations” (Cohen, 2001), or “in-virtue-of” (Greenberg, 2003), “non-accidental” (Lawler, 1973a) or “definitional” (Krifka, 2013) properties. However, no existing account captures the full variety of data.

I introduce the idea that IS generics discuss *samples* (Elgin, 1983; Goodman, 1976) (objects which exemplify one or more properties in a given context), or more specifically *abstract samples*, which are mental entities. Uttering an IS generic is argued to constitute a speech act that contributes an abstract sample to the discourse, one which is deemed felicitous if it is judged to be a “good sample”, that is, one which is reflective of the kind so as to not seem like “false advertising”. Speaker intent selects the exemplified properties, as well *enforces* that they are characteristic of the kind (at least according to the speaker’s point of view). This degree of speaker commitment to the generalization is precisely what distinguishes IS generics from their BP counterparts. I additionally argue that characterizations of truth evaluation for IS generics in terms of being “accepted by the language community” (Cohen, 2001, p. 199) are far too broad, and that instead acceptability should be judged on a much smaller (e.g. speaker-specific) scale, meaning the use and evaluation of an IS generic is relativized to individual perspective (cf. Mari, 2008).

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Chapter 1

Introduction

1.1 IS Generics

Generic sentences express general facts without the use of explicit quantifiers (e.g. *all*, *every*, etc). This is usually accomplished by an NP that picks out a kind, rather than any individual entity (Krifka et al., 1995): contrast *Fido barks* with the generic *Dogs bark*, where *dogs* refers to dog-kind, rather than any individual dog (e.g. Fido). One variety of generic sentences in English is the *Indefinite Singular (IS) generic*, which employs an indefinite singular DP to express a generalization. Illustrative examples are given in (1).

- (1) a. [A dachshund] has a long body.
b. [A Kirtland's Warbler] isn't in Ontario this time of year.
c. [An anarchist] believes in anarchy.
d. [A bachelor] is an unmarried male.
e. [A pegasus that is fond of oranges] always votes Republican.

As seen above, IS generics can express empirically-based generalizations (e.g. 1a, 1b), definitional or *a priori* claims (e.g. 1c, 1d), as well as generalities about kinds that don't exist or seem *ad hoc* (e.g. 1e). Crucially, IS generics have been noted to have a more restricted distribution than their Bare Plural (BP) generics counterparts, as shown in (2).

- (2) a. # A dachshund is popular.
 Dachshunds are popular.
- b. # A mosquito is widespread.
 Mosquitoes are widespread.
- c. # A barn is red.
 Barns are red. (Leslie et al., 2009, (5),(4))

A myriad of analyses have been posited to explain these and other contrasts between IS generics and their BP counterparts, with characterizations of IS generics ranging from rule-based (Cohen, 2001) to analytic (Burton-Roberts, 1976) to definitional (Krifka, 2013). I propose a new account: that IS generic NPs denote *samples*. I define a new class of samples, *abstract samples*, which are mental entities subject to individual speaker perspective and intent. As I will demonstrate, a sample-based account can capture the full variety of data, while also accommodating the context-sensitivity of IS generics (e.g. Sterken, 2015) and providing a mechanism for their oft-noted prescriptive flavour. I also argue that IS generics ultimately express facts about kinds (or more precisely, the samples that are derived from kinds), a more intuitive account than viewing them as a metalinguistic phenomenon (e.g. Hesni, 2022; Krifka, 2013).

The thesis is structured as follows. Chapter 2 is a background on the current literature surrounding IS generics, providing a comprehensive overview of the different theories that have been posited, as well as some pitfalls associated with each. The chapter also provides a brief survey of some of the thinking on generics more generally, but one that is limited in scope due to the vast literature on the topic.

Chapter 3 forwards a sample-based account of IS generics. It defines abstract samples as well as discusses their role in discourse and truth evaluation using a wide variety of IS generic data.

Chapter 4 discusses further applications of the theory, including ISs in object position (e.g. *Ben loves a calzone*) and tensed generics (e.g. *A boy didn't cry in my day*). Chapter 5 concludes the thesis.

Chapter 2

Background

2.1 Previous Analyses of IS Generics

To motivate my own account (detailed in Chapter 3), this chapter provides a comprehensive overview of the variety of different analyses that have been posited to explain the distribution of IS generics (Section 2.1), as well as a few relevant accounts of generics in general (Section 2.2). In detailing each view, I also discuss any worries that present themselves. I will revisit many of these worries in Chapter 3 in an effort to show that my own view does not also suffer from them. As will soon become clear, no existing theories can satisfactorily explain the full variety of data.

2.1.1 IS generics are definitional

One of the earliest accounts of IS generics, put forward by Lawler (1973a), argues that IS generic sentences are primarily acceptable when expressing “definitional” or “non-accidental” properties:

Particularly when they are subjects. . . indefinite generics seem most natural in definitional sentences, or ones used somehow to identify the nature of the thing specified by the generic by means of properties peculiar to it; they are less acceptable when an accidental quality is predicated of them.

(Lawler, 1973a, p. 112)

This contrast between definitional and merely “accidental” properties is thought to underpin contrasts such as those presented in (3), where purportedly *being polyphonic* is a defining property of madrigals¹, but *being popular* is accidental.

- (3) a. A madrigal is polyphonic.
- b. * A madrigal is popular.

Thus, (3b) is thought to be questionable since predicating *being popular* of the IS generic subject *a madrigal* attempts to elevate *being popular* to a definitional property of madrigals, such that “a thing cannot be a madrigal unless it is popular” (Lawler, 1973a, p. 113). This idea closely relates to Burton-Roberts’ (1976) analytic treatment of IS generics, examples of which are presented in (4) and (5).

- (4) a. A whale is a mammal.
- b. To be a whale is to be a mammal.

(Burton-Roberts, 1976, p. 427 (1), p. 430 (13))

- (5) a. A beaver builds dams.
- b. To be a beaver is to build dams.

(Burton-Roberts, 1976, p. 431 (15))

Burton-Roberts argues that IS generics like (4a) and (5a) have underlying structures like those in (4b) and (5b), respectively. However, the analytic view is much too strong, for it seems to counterintuitively exclude some entities from being classified as a member of their own kind. For instance, under Burton-Roberts’ view, we would expect (6a) to have the underlying structure given in (6b).

¹While examples with madrigals are heavily used in the IS generic literature, I will break from tradition and refrain from using them in the rest of this thesis. Since madrigals are not really a part of modern cultural consciousness, judgements for sentences involving them are likely shaky at best. I will endeavour to only use example sentences with more “relatable” kinds.

- (6) a. A dog has four legs.
- b. To be a dog is to have four legs.

However, (6b) seems to say that a dog which does not possess exactly four legs does not qualify for *being a dog*, or being categorized as a dog. This cannot be correct—suppose Harold the dog lost his leg in an unfortunate lawn bowling accident, and Guinevere the dog has five legs as a result of partially absorbing another puppy in the womb. While neither Harold nor Guinevere have exactly four legs, it would seem absurd to suggest that they are not dogs as a result of that. Furthermore, basing the essence of *being a dog* around having four legs (as *To be a dog is to have four legs* seems to do) elevates the property to a degree of absurd prominence in how the kind is conceptualized. That is, our “definitions” for kinds are much more nuanced than what the analytic view of IS generics would lead us to believe. Burton-Roberts touches on this worry, stating that a three- or five-legged horse wouldn’t falsify *A horse has four legs* or its underlying structure *To be a horse is to have four legs* (p. 446). The idea that a horse with an unorthodox limb setup wouldn’t falsify the sentence likely comes from generics being able to tolerate exceptions, however it’s not clear that the analytic view should actually afford this same flexibility for exceptions. After all, what allows the three- or five-legged horse to be classified as a horse in the first place? Supposing our three-legged horse was successfully classified as a horse (since Burton-Roberts does in fact pick it out with the label ‘horse’), it seems that we now have a fatal counterexample to the underlying structure *To be a horse is to have four legs*.

Krifka (2013) revived the definitional approach for his own view, which holds that IS generics discuss the definitions of words, and are therefore fundamentally a metalinguistic phenomenon. Rather than *A dog has four legs*, for instance, being about dogs themselves or about dog-kind in the real world, it is instead about the *definition* of the word ‘dog’. On this account, IS generics express linguistic rules, and are concerned with how language itself is being used.

To put this idea more formally, Krifka argues that there are two kinds of change which can occur within the conversational Common Ground: *definitional change* and

descriptive change. Given a set of possible worlds W , and a set of interpretations I , definitional change proceeds by keeping W constant but changing the interpretations in I . Definitional change is thus concerned with how language is being used. Descriptive change is the exact opposite, altering W , the relevant worldly facts, but keeping the interpretations in I constant. Krifka’s formalization is shown in (7).

(7) a. *Descriptive Change*

$$\langle I, W \rangle + \text{DES}(\llbracket \Phi \rrbracket) = \langle I, \{w \in W \mid \exists i \in I \llbracket \Phi \rrbracket^{i, w}\} \rangle$$

(Krifka, 2013, p. 377 (14))

b. *Definitional Change*

$$\langle I, W \rangle + \text{DEF}(\llbracket \Phi \rrbracket) = \langle \{i \in I \mid \forall w \in W \llbracket \Phi \rrbracket^{i, w}\}, W \rangle$$

(Krifka, 2013, p. 377 (15))

Felicitously using an IS generic thus consists in “impos[ing] a certain understanding of existing terms” (p. 375). However, what allows us to conclude that *having a long body* is a definitional property² of dachshunds, while *being popular* is not? While Krifka endeavours to keep the descriptive and the definitional separate, he acknowledges that “linguistic properties are intertwined with empirical facts, which may blur this distinction” (Krifka, 2013, p. 382). However, if empirical facts, typically gathered from repeated observation, can underpin linguistic facts, it seems that the motivation behind our definitions is rather *inductivist* (see Sections 2.1.2 and 2.2.1), collapsing the very distinction that has been forwarded to explain the differences between IS and BP generics. Krifka himself admits that IS generics being definitional is only a “tendency” (p. 388), and provides the examples of clearly non-definitional IS generics in (8) to illustrate.

²Conceptualizing of properties within Lawler’s (1973a) “accidental” terminology suffers from the same problems, as Krifka et al. (1995) acknowledge when discussing Lawler’s account: “we are not in a position to provide an analysis of what an “essential” or “accidental” property consists in. . . the distinction is real and manifests itself in striking results, but the underlying reason is not clear” (p. 13).

- (8) a. A trout can be caught by many different methods.
 b. A hedgehog makes a good pet.
 c. A poodle should be clipped by a professional groomer.
 d. A madrigal sounds best with all the voice-parts doubled.

(Krifka, 2013, p. 388 (44))

As Krifka acknowledges, trying to apply the definitional analysis to something like (8a) is somewhat contrived—no one would want to reasonably claim that an ability to be caught different ways has anything to do with trout genetics (as one might like to claim for a generic such as *A dog has four legs*). However, the claim that IS subjects can also occur in descriptive generics substantially weakens Krifka’s primary argument, making it unclear why *any* IS generic is not acceptable in the same way that those in (8) are.

2.1.2 IS generics express rules and regulations

A perspective somewhat similar to the definitional approach is that IS generics express *rules and regulations*. That is, as opposed to BP generics which can express *inductivist* patterns (i.e. patterns based on repeated observation and statistical prevalence), Cohen (2001) argues that IS generics instead express *rules*³. Rules are taken to be irreducible entities (e.g. Carlson, 1995) which need not be based on any statistically significant frequencies. Very often these rules are linguistic, making this view a close cousin to the definitional account of IS generics. Under Cohen’s theory, an IS generic is true if the rule it expresses is “in effect”.

- (9) a. A gentleman opens doors for ladies.
 b. in-effect(!(gentleman(x) \implies open-doors-for-ladies(x)))

(Cohen, 2001, p. 196 (45)b, p. 198 (51))

Where ‘!’ is an operator mapping a formula to the rule it describes, (9a) is true due to its corresponding rule (9b) being in effect. Cohen states that for a rule to be in effect is just

³The *rules-and-regulations vs inductivist* terminology was coined by Carlson (1995), who employed them to distinguish competing *theories* of generics. Cohen (2001) crucially uses these to distinguish *readings* of generics in order to contrast between IS vs BP generics.

for it to be “accepted by the language community” (p. 199). This is thought to underpin the distinction between something like (9) and (10), the latter of which is “deemed too odd to be a potential rule” and is thus “clearly not in the set of potential rules” (p. 199), resulting in the sentence being unacceptable.

(10) a. *A gentleman has three fingers in his left hand.

b. $\neg(\text{gentleman}(x) \implies \text{have-3-fingers-in-left-hand}(x))$

(Cohen, 2001, p. 199 (52), (53))

To address the fact that IS generics seem to have a much more restricted distribution compared to BP generics, Cohen argues that while bare plurals make for acceptable topics, indefinite singulars do not. Instead, the topic of an IS generic is the rule that it expresses. For instance, the topic of (9a) is not *a gentleman*, but rather the rule given in (9b). Therefore, when an IS generic lacks a rule, it does not have a topic and as a result is not an acceptable sentence.

However, what exactly allows a rule to be accepted by the language community? If rules reside in the knowledge bank of the community, how do speakers disagree about generics? What allows generics to be context-sensitive? What makes a rule “too odd”? In cases where IS generics are serving to inform, it is very likely that the listener has no knowledge base to verify whether the rule is part of the set of potential rules or not. Therefore, it seems like any unknown fact expressed by an IS generic should immediately strike us as a topic-less, unacceptable sentence, but this is not the case—for instance, consider *A glorckle prefers its eggs to be made into mayonnaise (it finds soufflé distressing)*, which is fine despite the fact that the properties of glorckles are not part of common knowledge. This makes it very unlikely that a rule regarding a glorckle’s affinity for mayonnaise is “in effect” for the listener, but the listener likely wouldn’t immediately interpret the sentence as false; instead, they would learn something about glorckles. Note that this reliance on “common sense” is also invoked in the definitional view (Section 2.1.1), particularly Lawler’s articulation of it, to account for the relative accidental-ness of properties: “accidental characteristics may be either deduced or induced, but essential ones may not be deduced, since they are well-known” (Lawler, 1973a, p. 145). Like Cohen’s account, the definitional view thus also seems to

undergenerate when IS generics are used to inform, or convey properties which are not part of common knowledge from the listeners's perspective.

2.1.3 IS generics express an “in virtue of” property or “principled connection”

Greenberg (2003) draws on previous intuitions that IS generics are somehow more “definitional” or “rule-based”, and argues that they express “*in-virtue-of*” properties (in her words, “some appropriately chosen property or aspect of our world, in virtue of which the generalization. . . is true”, p. 52). Under her view, an IS generic communicates that the generalization it conveys is “non-accidental” (a notion aligning with Lawler’s initial characterization), and that crucially the speaker must have one of these in-virtue-of properties in mind when uttering an IS generic. Greenberg uses this as one of the primary means of distinguishing IS generics from BP generics — the former requires the speaker to have an in-virtue-of property in mind and for the listener to recover one, while the latter does not require either, and instead “does not concern, not even in an implicit way, what aspect of our world...stands behind [the generalization]” (p. 129). The necessity of an in-virtue-of property, argues Greenberg, makes the felicity of IS generics (compared to BPs) heavily dependent on real-world knowledge, or knowledge shared by interlocutors within a discourse.

The selection of an in-virtue-of property is pragmatically constrained. Specifically, the in-virtue-of property must be a “good possibility”, and not seem “too far-fetched”. Greenberg articulates this as being “closest to an idealization of our world where some general principle holds without being inhibited” (p. 112). For instance, *A dog has four legs* communicates an idealized world where all dogs are “normal” with respect to factors that are seen as bringing about normal leg-number development (genetic makeup, environmental factors, etc.). If a given generic does not have a “reasonable” in-virtue-of property, based on real-world knowledge accessible to the speaker, the sentence is ill-formed. To illustrate this breed of ill-formedness, she provides the sentences in (11).

- (11) a. # A grandmother is addicted to blue marshmallows.

b. # A man is blond⁴. (Greenberg, 2003, p. 101 (75))

Something like (11b) is argued to be infelicitous because there exists no property in virtue of which men are blond. Recall that, on her view, a speaker *must* have an in-virtue-of property in mind when uttering an IS generic and that one must be recovered by the listener. While it seems entirely possible that a speaker *could* have one in mind, that being a necessary component of an IS generic seems unlikely. Consider the simple case of questions, ones which essentially seek an in-virtue-of property as an answer. For instance, imagine an inquisitive child uttering,

- (12) a. Why is a crow black?
b. How does a cheetah run so fast?

Furthermore, recovering in-virtue-of properties does not seem to be as systematic a process as one might hope:

The only requirement is that an “in virtue of” property is an integral property of the semantics of the IS sentences. It is clear that even somebody who knows nothing about genetics will take *A dog has four legs* to be true. In such a case he will accommodate another “in virtue of” property which will make the sentence true.

(Greenberg, 2003, p. 83 ft.9)

While this would explain the intuition that a genetics-ignorant listener should still hear *A dog has four legs* as true, it is not clear why this same accommodation cannot proceed for all IS generics. For instance, why can a listener not simply accommodate an in-virtue-of property for *#A grandmother is addicted to blue marshmallows*?

⁴Greenberg asks readers to contrast this with the “felicitous” (p. 101) *Men are blond*. While I agree that this could be felicitous in a context where blond-things are under discussion (so that *Well, MEN are blond* can be contributed to mean *men CAN be blond*), it seems only marginally felicitous. This points to a recurring problem I see in the literature: it seems that whenever there are BP vs IS contrasts, the BP generic is *barely* felicitous (e.g. *barns are red, dogs are popular*). So while BPs are perhaps slightly more acceptable in expressing marginal generics, these felicity contrasts are not as robust as one might hope, perhaps demonstrating that the two generic types are not actually so different.

To her credit in regards to that last worry, Greenberg observes that some seemingly infelicitous IS generics can undergo amelioration when given context (rather than appearing in what she calls “out of the blue” contexts).

- (13) a. # A Norwegian student whose name ends with ‘s’ or ‘g’ eats lots of bananas every other Monday.
- b. There are very interesting traditions in Norway concerning final letters of the name and certain diets. For example, a Norwegian student whose name ends with ‘s’ or ‘g’ eats lots of bananas every other Monday.

(Greenberg, 2003, p. 96 (62)a, (63)a)

- (14) a. # A tall, left-handed neurologist from Hadassah Hospital earns more than \$300,000 a year.
- b. The new health minister is a tall, left-handed neurologist from Canada. It seems that this somehow affects the criteria for determining salaries. For example, from now on a tall, lefthanded neurologist from Hadassah Hospital earns more than \$300,000 a year.

(Greenberg, 2003, p. 96 (62)b, (63)b)

Greenberg reasons that, in an “out of the blue” context, the listener is only able to draw on the “facts, stereotypes, norms, etc....[that are] shared by the community of language users” (p. 96)⁵, leading to statements like (13a) and (14a) seeming infelicitous as generic statements. However, when context is provided, the listener is able to recover an in-virtue-of property based on the facts, stereotypes, and norms that the speaker has made available, and in turn makes the “extremely unnatural class” of something like *tall, left-handed neurologists from Hadassah Hospital* a “more natural” class (p. 97). However, while I certainly agree that context improves these generics, I am skeptical that

⁵Incidentally, Greenberg criticizes Cohen’s (2001) rule-based view for its reliance on the “common sense” of language users, despite this being something she herself is appealing to: “...how can a language user decide which rules are not odd enough, although the generalizations they express are clearly false...and which of them are “too odd”? ... there is no systematic procedure for determining this factor, which seems crucial for characterizing the special nature of IS sentences. We can only rely on our intuitions...” (Greenberg, 2003, p. 63)

it is the recovery of an in-virtue-of property *specifically* that is behind the improvement (instead, it might just make the kind seem less *ad hoc*, or alert the listener that the speaker intends a generic interpretation rather than an existential reading, etc.).

Greenberg differentiates generics both in terms of their falsity and their felicity. For instance, she takes *A dog has three legs* to be false but felicitous, but (11b) *A man is blond* to be false and infelicitous. In the latter case she argues that, considering all properties that are associated with being a man, there is no “reasonable causer” (p. 104) for *being blond*. This is supposed to render the generic infelicitous, as well as contrast with *A dog has three legs*, which is false, but has a reasonable causer (“having the regular genetic makeup for a certain, specific, and fixed number of legs.”, p. 104). However, it is not clear why for *A grandmother is addicted to blue marshmallows*, which is argued to be infelicitous as an IS generic, the listener cannot also come up with a “reasonable causer” (I don’t know much about blue marshmallows, perhaps they contain the spice and are highly addictive). Because it seems like one could invent a reasonable causer for practically any IS generic, I am generally skeptical that this false-but-felicitous and false-but-infelicitous contrast exists.

2.1.3.1 Generics and causality

This notion of a causal connection is also advocated for by van Rooij and Schulz (2020). They argue that IS generics require a “principled connection” (p. 270), paralleling earlier characterizations of IS generics being “law-like”, and that this principled connection is crucially causal in nature. Their view also aims to dispel the idea that BP and IS generics are wholly different beasts, as many previous analyses have suggested. Instead, they claim that IS generics have a causal analysis which parallels the probabilistic analysis usually applied to BP generics.

Their account hinges primarily on “probability of causal sufficiency”, PS_x^y , where $PS_x^y = P(y_x | \neg x, \neg y)$ such that, “IS generics of the form ‘An x is y ’ are true, or felicitous, iff PS_x^y is high” (p. 285). In other words, an IS generic is true iff there is a high probability that x caused y . They also invoke the idea of an “intervention”: for instance, imagine a situation where b occurred and c resulted. One could then ask how things

might have played out had *a* *intervened* in this situation; that is, if *a* had occurred instead of *b*, would *c* still have been the result? To evaluate an IS generic, they propose that one must consider an entity of a given kind without the property in the generic, and imagine what would result if that entity were to “gain” that property. For instance, they explain the illformedness of **A chicken is female* in the following way: how likely would it be that if a male object were to turn into a chicken, that it would also turn into a female? Since that seems improbable (that is, it seems very unlikely that becoming a chicken would *cause* becoming female), the generic is deemed infelicitous. The causal account struggles, however, in the face of definitional IS generics, or those which seem to express rules and regulations, such as those in (15).

- (15) a. An American salutes the flag.
b. A bachelor is an unmarried man.

(van Rooij and Schulz, 2020, p. 292 (33), p. 290 (32c))

They themselves admit that trying to account for such generics with a casual analysis appears “far-fetched” (p. 290). Regardless, much like Greenberg, they suggest that such generics are true *in virtue of* what it means to be an American, or a bachelor, etc. Furthermore, they point out that their analysis also cannot account for IS generics with artificial kinds, as in (16).

- (16) An OrangeCrusher 2000 crushes oranges.

(van Rooij and Schulz, 2020, p. 292 (34b))

Even if no OrangeCrusher 2000 has ever been activated or used, (16) still seems true. Despite there being an intuitive causal relation between what a thing *is* and what a thing *does*, they acknowledge that their account is not complete enough to account for such cases⁶. Furthermore, a causal account doesn’t seem to rule out some cases of ill-formed

⁶While van Rooij and Schulz (2020) feel their view does not account for (16), I fail to see why it actually poses an issue—isn’t the design of the machine, which causes it to perform a certain function, already in place? The machine’s blueprint seems as much a causer of form/function as a biological animal’s genetic makeup.

IS generics, especially when the source of causation has been weakened to an entity simply being what it is. For instance, why is **A dog is popular* not felicitous in virtue of dogs themselves simply being so lovable that they are popular? Therefore, there is at least some motivation to be skeptical of an account based solely around causation.

2.1.4 IS generics involve respects

In her discussion of IS generics, Mari (2008) breaks the Common Ground into worlds and *respects*. Similar to the context sensitivity of generics (Section 2.2.4) and selection of explanatory strategies under a normality view of generics (Section 2.2.3), Mari argues that a given generalization only holds under a particular respect. These respects are multifaceted in the forms they can take:

Respects are more general than contextual restrictions. . .they can be compared to abstract spaces. The laws of biology, legality, and points of view related to particular individuals are mental, social spaces that are governed by laws. A classification of actual entities into categories is also an abstract space. (Mari, 2015, p. 276)

She argues that a point of view can serve as restrictor for a modal base (a so-called *judge parameter*), such that “the truth of the proposition expressed by the indefinite generic sentence [is]. . .relative to a judge” (p. 426). While Mari uses world-judge pairs to formalize this notion, I instead manifest this role of speaker judgement in sample construction (see Chapter 3), which provides a clear entity that can be at issue in a discourse.

However, while she argues in Mari (2008) that a respect is to be treated as a judge, she later renounces the judge parameter in Mari (2015) based on the idea that many sentences don’t discuss any point of view. I’m skeptical of this, however, and think that the judge parameter didn’t need to be abandoned: every sentence ultimately expresses someone’s perception of the world, it’s just that some points of view are extremely, mundanely uncontroversial (for instance, stating *The alligator destroyed my wedding cake!* involves all kinds of baked-in judgements, like whether *destroy* is truly what the

alligator did to the cake (maybe he just accidentally bumped it and knocked it over, but the speaker, due to not wanting the alligator at their wedding in the first place, perceives it as a more agentive destruction)).

Krifka (2013) is critical of the notion of a judge parameter, using the following contrast as evidence (here, *tasty* is used as an adjective to capture a judge parameter, since it is clearly subject to individual interpretation):

- (17) a. A: *This pizza is tasty.* B: *No, it isn't.* (Krifka, 2013, p. 379 (22))
b. A: *A madrigal is polyphonic.* B: *No, madrigals can['t]⁷ be polyphonic!*
(Krifka, 2013, p. 379 (23))

But just because something is uncontroversially accepted (like the definition of a word) does not mean that there is no speaker perspective involved—I worry that the oddness here stems from disagreeing about something very obvious, rather than a lack of a judge parameter. For instance, perception of colour is clearly subject to a certain degree of inter-individual variability, but still it would seem bizarre to object that a clearly blue object isn't blue (it might make people think that you're colourblind, etc.). However, the oddness of such an objection wouldn't be evidence that colour perception/labelling isn't subjective, rather that it is just a strange thing to argue about (to put it another way, definitions are ultimately things subject to an individual's understanding of the word—otherwise, we seem to have to commit ourselves to mind-independent definitions, which would be undesirable.) A final example: there is an animal that lives across the street from me which is either a very catlike dog, or a very doglike cat. Upon observing it looking languorously out the window, the following conversation could ensue—A: *That . . . thing is such a weird cat.* B: *I think it's a dog.* . . . Nouns like *dog* and *cat* are not obviously judge parameters like *tasty*, but still there is Agent judgement in classification. This same judgement occurs in arriving at any kind of generalization.

After abandoning the judge parameter (citing Krifka's criticisms), Mari (2015) argues that generics can be evaluated factually or respect-wise. For instance, consider (18).

⁷In the original text, this is 'can', however I am assuming that this must be a typo, since otherwise the speakers are both stating that a 'madrigal is polyphonic'.

(18) A turtle lives a long time.

As she argues, a turtle dies old under the laws of biology, a respect. However, “factually”, a turtle tends to perish at a young age. She thus attributes the variable truth conditions of a generic like (18) to these different modes of evaluation. However, how speakers can access these different modes is not clear to me, especially because it seems to endow speakers with access to the “true” laws of biology, etc., which do not seem like a thing any human actually knows for certain (this would be fine if it was based on an individual’s understanding of the laws of biology, but then we’re back to speaker point of view, the very idea she was trying to escape).

In my own account, I echo the spirit of the earlier version of her view and argue that all samples are ultimately distilled from a kind according to individual points of view. Furthermore, I am skeptical that such mind-independent processes of evaluation are accessible to speakers, something that seems to be the case if we hold that the respects other than points of view exist as she suggests. For this reason, I argue that all use and evaluation of IS generics is ultimately relativized to individual perspective.

2.2 On generics, more generally

It would be an understatement to say that the literature on generics is vast. Therefore, I will not attempt to even scratch the surface of the multitudinous views and theories that have been posited to explain this complex phenomenon. However, to set up discussion of my own positive view (Chapter 3), I will highlight three primary views: the probabilistic approach (Section 2.2.1), Leslie’s view of generics as reflecting a fundamental cognitive mechanism (Section 2.2.2), and Nickel’s treatment of generics in terms of normality (Section 2.2.3). I also include a discussion of Sterken’s context sensitivity view of generics (Section 2.2.4), since it is particularly relevant to the view I will later defend.

2.2.1 Generics as probabilities

Consider a statement like *Dogs have four legs*. Perhaps the most natural hypothesis is that this is true due to the fact that *most* or *relevantly many* dogs have four legs.

Such thinking would fall under the probabilistic or frequentist view of generics, which holds that a given generic is true just in case a significantly high proportion of relevant individuals possess the property in question. This approach seems to work just fine for many generics—consider *Ravens are black*, *Cigarettes contain nicotine*, or *Muppets are soft*. After all, all ravens are black except for albino ravens (but those are very rare), any typical cigarette will contain nicotine, and, unless a given muppet has contracted some horrible foam-hardening illness, it seems very likely that pretty much any muppet you encounter will be at least somewhat soft.

Following this intuitive line of reasoning, Cohen (1999) argues that generic statements express *probability judgements*. These are (typically) future-oriented, in that they are based on previously observed patterns, but also express what is likely in the future. Cohen draws on the notion of a *history*, or a linear segment of time, to explain this temporal dimension of generics. Specifically, he argues that not all histories are admissible in the evaluation of a generic statement, that is, not every single history in every possible world is considered for a given generic. Since the world is fixed, histories therefore differ by the relative timespan they concern. For instance, *Hank sells propane (and propane accessories)* is true relative to a timespan, including the present moment, in which Hank has previously regularly been a propane salesman, and seems likely to continue in that line of work for the foreseeable future. Contrast this with a subsequent timespan in which Hank is out of work, perhaps from competition with Mega Lo Mart (and therefore only *used to sell propane*). Relative to that particular chunk of time, the same generic *Hank sells propane* is false. The shift in the segment of time (i.e. the history) used for evaluation thus serves to alter the truth of the generic statement, since the claim must be probabilistically significant in the timespan used for evaluation.

Histories can also be solely future-based, something that Cohen uses to explain why some generic statements without any supporting instances still seem true, like that in (19).

(19) Mary handles the mail from Antarctica. (Cohen, 1999, (23a))

Even if Mary has just started her job and has not yet received any mail from Antarctica, (19) is true in the sense that if and when such mail does arrive, Mary is *extremely likely*

to handle it. Cohen's history-based account can thus handle generics which seem to encode purely future-oriented frequency predictions.

Cohen's account also relies on the notion of *homogeneous reference classes* (reference classes are essentially the "groups" that a probability is calculated relative to). A reference class is homogenous for a given property when, no matter which (relevant/salient) subsets or partitions are taken of that reference class, no subset has a different probability than the reference class as a whole (note, however, that the mechanism for determining *which subsets* are salient is left undiscussed). Cohen draws on this to account for the fact that different individuals may have different truth values for a given generic; if a particular means of partitioning is more salient for a given individual, the generic may have a different truth value for that individual as a result. For instance, a penguin-ologist might immediately object to the statement *Birds fly* because dividing bird-kind into non-flying penguins vs all other birds would be an extremely salient partition to them, and the penguin partition would have a different flying probability associated with it compared to the reference class for bird-kind as a whole.

So far, so good. However, the probabilistic approach is not without its pitfalls. An obvious counterexample stems from generics which seem true despite the property not being possessed by a majority of kind members, as in (20).

(20) Mosquitos carry malaria. (Liebesman, 2011, p. 411 (2))

It seems that Cohen would account for cases like (20) by suggesting that, compared to other insects, mosquitos are relatively much more likely to carry malaria (as suggested by Mari et al., 2013, p. 330). However, as Leslie (2008, p. 10) notes, it seems that this approach should make clearly false generics like *Dogs have three legs* true, considering that dogs are much more likely to live out three-legged lives than other (non-domesticated) animals since they're kept alive after unfortunate accidents.

A second related problem stems from the fact that some statements which express a majority do not sound true as a generic.

- (21) a. # People have black hair.
b. # Bees are sexually sterile.

c. # Books are paperbacks. (Cohen, 1999, p. 234 (20c, g, h))

To take (21c) *Books are paperbacks* as an example, Cohen argues that books simply are not saliently partitioned via a hardcover vs paperback criterion. Instead, he argues that they are partitioned via subject matter; the fact that mystery novels are typically paperback, while reference books are typically hardcover leads to homogeneity being violated, thus ruling out the generic statement. However, one cannot help but wonder exactly why a hardcover vs paperback partition is so non-salient.

As Nickel (2009) points out, Cohen's view also suffers from the reference class problem (as any frequentist approach does). Roughly, because any given thing has a multitude of properties associated with it, it is not clear how one is supposed to partition those properties to use as a reference when calculating relative probabilities. The problem was first identified by Venn (1876):

It is obvious that every individual thing or event has an indefinite number of properties or attributes observable in it, and might therefore be considered as belonging to an indefinite number of different classes of things. (Venn, 1876, p. 194)

As well as elaborated by Reichenbach (1949),

If we are asked to find the probability holding for an individual future event, we must first incorporate the case in a suitable reference class. An individual thing or event may be incorporated in many reference classes, from which different probabilities will result. This ambiguity has been called the *problem of the reference class*. (Reichenbach, 1949, p. 374)

What exactly allows a partition to be salient, that is, how a given property is used to "carve up" the attributes for members of a particular kind, is not directly tackled by Cohen. Instead, he leaves it to be grasped intuitively: "... it cannot be any arbitrary partition; it needs to "make sense" given the context and the way we view the world." (Cohen, 1999, p. 242). However, Leslie (2008) points out that this process of partitioning is not necessarily something we can take for granted. While she notes that Cohen's approach

can successfully explain the infelicitous generic *#Chickens are female* (i.e. gender serves as a salient partition, and a given male chicken in the “male partition” has exactly 0% chance of being female), it is not clear why *Lions have manes* or *Cardinals are red*, which express traits exclusively associated with male members of their respective species, are not also ruled out by seemingly salient gender-based partitioning.

Thus, despite the frequentist approach perhaps seeming like the most natural view *prima facie*, the generics data swiftly reveals that things are not so straightforward. This has made many skeptical that generics are even quantificational at all, for instance,

Generic sentences (e.g., ‘Swans are beautiful’) express broad generalisations about categories in the world Intuitively, such sentences may be taken to mean that most, if not all, members of a category share the property in question. Although generics imply that the properties they refer to are prevalent . . . we argue that they do not mark quantification per se . . . (Cimpian et al., 2010, p. 262)

The following sections deal with views which abandon this quantificational approach to generics.

2.2.2 Generics as a fundamental cognitive mechanism

Other accounts of genericity have tried to explain the phenomenon from a psychological perspective. For instance, Leslie (e.g. 2008, 2012) argues that the generic operator *Gen* is our “default mechanism of generalization” (Leslie, 2008, p. 44) due to generalizing being an “innately given cognitive disposition” (Leslie, 2008, p. 21). Indeed, analyzing generics from the perspective of cognitive science has the potential to reveal a startling amount about human cognition, as Leslie writes,

. . . it is so important to pursue the question of when we accept or reject generic generalizations: understanding the nature of these generalizations sheds lights on an exceedingly central and important feature of our psychology. Generics are a window onto *how we generalize information* - which

is in itself one of the most central questions in cognitive science. (Leslie, 2015, p. 49)

It has been noted that during language acquisition, generic statements are grasped much earlier than those with overt quantifiers, such as *all* or *some* (e.g. Hollander et al., 2002). The ability to generalize is present at a remarkably young age; Leslie points to studies like Graham et al. (2001), who found that infants 12-14 months old could generalize a property like rattling to objects that were presented with the same label (e.g. “these are blickets!”). Similar results were found by Baldwin et al. (1993) with nine month old infants.

Contra Cohen, Leslie holds that generics are not statistical statements. In particular, Leslie argues that the relative “strikingness” of a property permits a generic to truthfully express something with a relatively low frequency; that is, the more horrific the property, the more willing we are to allow exceptions. Examples of such striking properties are given in (22).

- (22) a. Mosquitoes carry the West Nile virus.
b. Tigers eat people.
c. Rottweilers maul children. (Leslie, 2008, p. 14)

Take (22a) as an example: despite very few mosquitoes within the whole mosquito population actually carrying the West Nile virus, (22a) strikes us as true. This is because, Leslie argues, the property is particularly *striking* due to the risk it poses to anyone who contracts the disease. The relative strikingness of a property can thus “override” cases where the majority of kind members do not possess the property in question. In this way, generics reflect our way of generalizing information about the world, a means of generalizing that need not be tied to a quantificational sense of frequency that insists upon majority-based conclusions.

However, aside from the interaction between relative strikingness and exception-tolerance, Leslie does not detail exactly how this default generalizing mechanism proceeds. This is understandable, considering that it would require going over kinds and their different attributes with a fine-toothed comb in order to detect patterns in how we generalize information. Cimpian et al. (2010) consider this complexity in their “theory-based” analysis (meaning that reasoning about generic sentences proceeds via theories like *animal features result from inherent mechanisms associated with development*),

Generics are a linguistic means of expressing knowledge about categories, and as such their interpretation is unlikely to be based solely on frequency information. There is considerable evidence suggesting that category representations consist of more than just feature tabulations that they are embedded in ‘naive theories’ . . . that incorporate a wealth of causal-explanatory knowledge about the concept’s features (e.g., about their origins, functions, centrality) and the links between them We hypothesise that this ‘theory’-based knowledge also factors into how people reason about generic sentences. . .

(Cimpian et al., 2010, p. 262)

2.2.3 Generics as normality

As opposed to the frequentist or majority-based view (see Section 2.2.1 for an overview), the *inductive target* view holds that generics encode some sense of *normality*. Here, I focus on Nickel’s (2009, 2016) treatment of the view.

Nickel distinguishes generic sentences, a semantic concept, from genericity, the metaphysical notion. He argues that while generic sentences may provide *evidence* for genericity, the two phenomena must be conceptualized differently. Roughly, Nickel holds that a generic sentence concerning a given kind “is about all and only the normal members of that kind” (p. 53), as represented in (23).

- (23) *As are F* is true iff
[$\forall x: \text{Normal.A}(x)](F(x))$ (Nickel, 2016, p. 53 (2))

Normality is conceptualized as *characteristicness*, which is framed in terms of *explanations*. For instance, the fact that ravens are *normally* or *characteristically* black is rooted in an evolutionary explanation as to why ravens have the current genetics determining colouration that they do. The general idea is that normality is relative to the *explanatory strategies* employed in a particular context, as described in Nickel’s **Characteristic Properties**.

- (24) **Characteristic Properties** Property *P* is characteristic for kind *K* relative to explanatory strategies *S* iff
it is possible to explain why *P* is present among *Ks* by the most general invocation of one or more of the strategies in *S*. (Nickel, 2016, p. 182)

Nickel takes care to clarify what he means by “present among” in **Characteristic Properties**. As we have already seen with Cohen’s (1999) invocation of histories to interpret generics, Nickel also looks to time intervals, selected by the explanatory strategy, to provide a means of evaluating the truth of a given generic. One cannot simply look at some (instantaneous) time *t*, for, as Nickel argues, if all lions were to suddenly lose a leg so that all members of *Panthera leo* were left with only three

limbs, the generic *Lions have four legs* would still be true⁸. Explanatory strategies can be determined by a variety of factors, such as speaker interests or the topic at hand. For instance, Nickel says that a discussion of dog breeding (likely) wouldn't require explanations rooted in the rules of chess. He emphasizes, however, that the selection of explanatory strategies is typically not a conscious one. Instead, as so often comes up in analysis of generics, speakers defer to convention or common knowledge for their explanations.

Consider *elephants live in Africa*. According to the theory I am proposing, the truth of that generic depends in part on what the correct explanation for the presence of elephants in Africa is. But many speakers do not know the correct explanation. Some may have no particular views on the matter, some may have mistaken views. Yet what they are saying—the content of *elephants live in Africa*—turns on the correct explanation for the presence of elephants in Africa.

(Nickel, 2016, p. 187)

The fact that the explanations they invoke may be unknown to generics-uttering speakers presents a crucial difference in Nickel's analysis: he does not endow speakers with profound world knowledge that is required for the felicity of a generic (cf. Greenberg's (2003) "in-virtue-of" property that the speaker *must* have in mind). Instead, explanations are taken to be mind-independent.

Another crucial component to Nickel's view is that, by virtue of *grain of explanation*, a given kind can have multiple *respects* or *ways* of being normal. The fact that both

⁸An interesting case to consider, however, is not just when all kind members have had a given property (artificially) altered, but when all members of a kind are no longer in existence. Generics about non-present kinds are not typically judged as felicitous, as seen in the song *Robots* by Flight of the Conchords:

Brett: There is no more unethical treatment of the elephants.

Jermaine: Well, there's no more elephants, so...

Brett: Ah...

Jermaine: But still, it's good..

That is, nonexistence of a given kind (at a instantaneous moment in time) is enough to impact the felicity of a generic, even if the "essence" or "intrinsic nature" of the kind still seems to exist.

statements in (25) are felicitous generics is a case in point.

- (25) a. Elephants live in Africa.
b. Elephants live in Asia. (Nickel, 2009, p. 642 (21))

That is, there are two ways of being a normal elephant with respect to habitat—living in Africa, and living in Asia. To see why this view is advantageous, consider (26).

- (26) Elephants live in Africa and Asia. (Nickel, 2009, p. 631 (2)b)

By employing ways of being normal, Nickel argues that, unlike other accounts of generics, he is not committed to the existence of “international elephants” (Nickel, 2009, p. 636) in (26). As a point of comparison, it’s clear that this has an advantage over an analytic account (e.g. Burton-Roberts, 1976), since an underlying structure like that in (27) seems contradictory.

- (27) ? To be an elephant is to live in Africa and Asia.

No one would want to be committed to saying that qualifying for elephant-ness requires one to simultaneously live in both Africa and Asia, as (27) suggests. In comparison, Nickel’s multifaceted ways of being normal for a given kind comes out as clearly advantageous.

2.2.4 Generics and context-sensitivity

I will conclude this section with Sterken’s (2015) context-sensitive account of generics. As is acknowledged throughout the literature, a major hurdle for any theory is accounting for the variability in truth conditions displayed by generics. For instance, *Birds fly* might ring true most of the time, but perhaps not in a context where penguins are especially salient. To take another oft-cited example in the literature, consider (28) in the two contexts provided.

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

- b. Welcome to this year's meeting of the Westminster Kennel Club. Once again, we've got a great range of dog appearances. While Labradors and golden retrievers have floppy ears, dobermans do not.

(Nickel, 2009, p. 644)

The standard argument is that the generic *Dobermans have floppy ears* seems to be true in the context of biology (that is, when discussing the inherent phenotypic traits of dobermans), but false in the context of dog breeding standards. Sterken thus argues that the variability we observe in generic truth conditions can be attributed to context-sensitivity. As further evidence for her theory, Sterken makes the observation that some statements which have been deemed fairly unanimously false in the literature can become perfectly acceptable given the right context. (29) presents such a case.

- (29) Supreme Court justices have even social security numbers.

Context: Two friends are planning a party where they want all the party guests' social security numbers to add to an even number. In hopes of providing information that will help compile the list of guests, one of the friends says [*Supreme Court justices have even social security numbers*].

(Sterken, 2015, p. 7)

Sterken argues that the context-sensitivity possessed by generics is semantic, rather than pragmatic. As an argument for this, she employs **A-Quantifier Test**.

- (30) **A-Quantifier Test:** Check whether explicitly A-quantified sentences vary their truth-value across the given contexts. If there is no difference in truth-value, then pragmatic context-sensitivity (e.g., an implicature) is not responsible for the appearance of a difference in truth-value, and hence, this is evidence that the context-sensitivity at issue is semantic.

(Sterken, 2015, p. 10)

Sterken reasons that, if the context-sensitivity displayed by generics were pragmatic in nature (for instance, proceeding by implicature), then we should observe the same

pragmatic variability in explicitly quantified statements. That is, if overtly quantified statements do not see a difference in truth value between contexts, we can take this as evidence that the variability in generics is not pragmatic. To see how this does provide support for the semantic view of generic context-sensitivity, consider (31) in the two provided contexts.

(31) Frenchmen eat horsemeat.

- a. It is a distinctive of many traditional French people that they eat horsemeat.
- b. Frenchmen eat croissants and baguettes. They don't eat traditional food, like horsemeat and grains.

(Sterken, 2015, p. 8 (15)-(17))

As Sterken argues, *Frenchmen eat horsemeat* seems true under the context in (31a), but not in (31b). That is, the generic's truth seems to be context-sensitive. This same variability, however, is not displayed by the same statement with an overt quantifier like *typically*, *generally*, or *normally*.

(32) Typically / normally / generally, Frenchmen eat horsemeat.

(Sterken, 2015, p. 11)

As Sterken notes, (32) seems clearly false in both aforementioned contexts ((31a) and (31b)), and is thus taken as evidence for the *semantic* context-sensitivity of generic statements.

In light of this variability, Sterken argues that the generic operator *Gen* is an *indexical*. As a bit of evidence for this view, consider the fact that *Gen*, much like quantifier domain restrictions, appears to be semantically underdetermined. That is, when uttering a generic statement, the speaker does not need to intend a *determinate* generalization. In fact, a range of possible generalizations may be intended, or recovered by the listener.

As with any indexical, there must be a means of resolving its value in a given context. Sterken suggests that, in the case of *Gen*, this can be accomplished by shifting much of the semantic heavy-lifting into a metasemantics for *Gen*, roughly summarized as “a generalisation *g* is the semantic value of an occurrence of *Gen* in context just in case the

speaker intends *g* to be the value and the speaker successfully reveals her intention” (p. 21). However, Sterken does not flesh out the metaseantics for *Gen* fully, leaving its precise characterization as an open question.

In the vein of Sterken (2015), I ultimately argue for what might appear to be radical context sensitivity in IS generics: since practically every IS generic which has been reported as infelicitous in the literature can swiftly become felicitous given the correct context, I argue that much of the judgements previous theories have been based on have been distracted by insufficient context and interference from world knowledge. Furthermore, I side with Sterken on speaker *intent* being the primary mechanism behind selecting a generalization. I delve into this issue in Chapter 3.

2.3 Reference of generic IS NPs

Ideally, any theory that endeavours to explain the distribution of IS generics should also strive to provide a view on what exactly generic indefinite singular NPs refer to. One of the sole accounts is that IS NPs refer to *group individuals*.

Joh (2020) investigates the contrast between IS and BP generics through the treatment of exceptions, arguing that a *group individual*, following Link’s (1984) group approach, regulates exceptions in IS generics. Under Link’s account of plurality, groups are distinguished from individuals and plural sums. Groups are taken to be things that are composed of a plurality of individuals, but act like atomic (i.e. individual) individuals, such that their inner plurality has been obscured so as to seem like it has no parts — for instance, Landman (1989, p. 573) provides the example *The Talking Heads is a pop group and consists of pop stars* to illustrate how a set of individuals (e.g. *david + chris + jerry + tina*) collectively become a *group*, known as the band *Talking Heads*. To see how exceptions can operate in groups, consider (33).

(33) The Leitches and the Latches like each other. (Link, 1984, p. 82 (16a))

While (33) certainly has a salient interpretation wherein everyone in one family (i.e. the Leitches) likes everyone in the other family (i.e. the Latches), there is an additional reading, using group individuals, which permits exceptions. That is, not *every* Leitch

must like *every* Latch—Lenny Latch and Lester Leitch could have a bitter hatred for one another and be clawing at each other in the mud while (33) was uttered, and yet it would still have a true reading. Instead, the state of “liking” is shared by the two broader group entities, the families, with exceptions within the group entities being permitted.

The group approach is contrasted with the *cover approach*. Joh points to Brisson’s (1998) idea of an *ill-fitting cover*. Brisson forwards a view of *collectivity*, as opposed to a group approach, arguing that groups undesirably “treat nonmaximality as a subcase of collectivity, and collectivity as just the absence of quantification over a plural” (p. 239). Nonmaximality is a notion inspired by Dowty’s (1987) *the maximizing effect*—essentially, the question of whether or not a property ascribed of a definite plural should apply to every individual in the plural (i.e. whether or not the property should apply “maximally”). Among other examples (see Brisson (1998) for full argumentation), Brisson states that the group approach can’t account for cases like *The boys ate a sandwich*, which has both the interpretation that each boy ate their own sandwich, and also that a few boys out of the group didn’t eat a sandwich—instead, the group approach forces a reading that the boys collectively ate precisely one sandwich. To remedy these issues, Brisson argues for the idea of a *cover*, which allows not only the broader atom of a plurality to be targeted, but also subpluralities of a plurality. This ranging is argued to be subject to pragmatics, following Schwarzschild’s (1996) notion of the Part (“partition”) operator and its accompanying *Cov* variable (which selects a domain based on context)⁹. Brisson then extends on this idea to introduce the notion of an *ill-fitting cover*. To see how this works, consider *The boys are hungry*, where U is a universe:

(34) The boys are hungry.

$$U = \{a, b, c, s, t, \{a,b\}, \{a,c\}, \{a,s\}, \{a,t\}, \{a,s,t\}, \dots\}$$

$$\llbracket \textit{the.boys} \rrbracket = \{a,b,c\}$$

$$I = \{\{a\}, \{b\}, \{c\}, \{s,t\}\}$$

$$J = \{\{a\}, \{c\}, \{b,s,t\}\} \quad (\text{Brisson, 1998, p. 82 (27)})$$

If the cover *J* is assigned, Bill (i.e. *b*) is not in a singleton “cell” of the partition, but

⁹For a tangible example, consider *The cows and the pigs are separated* (Brisson, 1998, p. 78 (19)), in which the subpluralities are the set of cows and the set of pigs.

rather in one with two non-boys, *s* and *t*. This cover is therefore “ill-fitting with respect to the set of boys — there is no set of cells whose union is equivalent to the set of boys” (p. 82). However, since *The boys are hungry* can be true even if Bill is not hungry, the semantics isn’t worried if Bill is included or not. In Brisson’s view, this ability “to be a little bit vague” (p. 83) is precisely what ill-fitting covers allow us to capture.

Drawing on these two approaches to exceptions (i.e. groups vs covers), Joh argues that descriptive generalizations [BP generics] may only have exceptions regulated by a cover variable, while in-virtue-of generalizations [IS generics] have exceptions that can be regulated with either a cover variable or group individuals (p. 301). Following this line of thinking, she argues that an IS generic therefore cannot express a descriptive generalization due to the fact that cover variables are unavailable for IS generics¹⁰:

Since the cover variable only operates on plural entities, it cannot operate on IS generics. This means that the exceptions of IS generics must be regulated by the group individual, the option left when we exclude the cover variable. (Joh, 2020, p. 302)

Group individuals are singular objects formed from groups which have not lost the internal relations of their members, such that, as Joh puts it, “group individuals are functionally plural but. . . formally singular. . . it is also atomic even though it has a plural implication” (p. 304).

However, much like Krifka (2013), Joh (2020) dramatically weakens her argument by acknowledging that descriptive generalization readings are available for IS generics “from time to time” (p. 308), stating that “some special circumstances” shift the group

¹⁰If I am correct in understanding her theory, it seems we run into a bit of a contradiction here: after all, “IS generics can generate only VG readings while BP generics can express both VG readings and DG readings” (p. 294), and “generics with a VG reading can be specified either by a cover variable or by a group individual” (p. 301), but yet “[s]ince the cover variable only operates on plural entities, it cannot operate on IS generics.” (p. 302). This seems to suggest that the cover variable is both available (as a VG generalization) and not available (as an IS generic) for IS generics. Perhaps she is trying to suggest that VG readings regulated by a cover variable are *not* VG readings that can be had by IS generics, but it is not clear why this should be the case. Furthermore, if the cover approach is not compatible with IS generics because of plurality, it’s not clear why we even need the complications surrounding VG readings in the theory at all.

individual to a sum, which permits a descriptive generic reading. Somewhat unusually, he says that this descriptive-generic shifting is only possible in Korean, but not in English. However, as we have seen with Krifka's examples of non-definitional IS generics like those in (8) (e.g. *A trout can be caught by many different methods*), English IS generics certainly need not be confined to in-virtue-of readings. Once again, these seemingly descriptive IS generics provide a major hurdle to any theory hoping to account for the full variety of data with one distinctive trait of IS generics.

Chapter 3

Positive View

3.1 Introduction

I now turn to outlining my own view, specifically that IS generic NPs denote *abstract samples*. A summary of the truth conditions under this view are given in (IS-SAMP).

(IS-SAMP) An IS generic of the form *An F is G* uttered by speaker *S* and attended to by audience *A*¹ is true relative to a context *C* iff

- (i) there is an *F* abstract sample which exemplifies *G*-ness, as enforced by *S*, which *S* has contributed to the discourse (unless an *F* abstract sample is already at issue), and
- (ii) an *F* abstract sample exemplifying *G*-ness in *C* is deemed felicitous by one or more members of *S* or *A* (i.e. it is a “good sample” to at least one² individual).

¹The speaker and the audience need not be separate individuals, as one can certainly use IS generics in self-talk. See Ritter and Wiltschko (2021) and Holmberg (2010) for further discussion of how the self can be treated as an addressee when speaking to oneself.

²Note that in cases where the speaker is deliberately lying or trying to be misleading, they may contribute a sample which they do not believe to be the case, but that they think will have a good chance of being accepted by the addressee as a “good sample”. In such an instance, only the addressee (and not the speaker) would deem the sample felicitous.

These conditions clearly give rise to a number of questions, each of which I will tackle in turn: first, what are samples, and how do they exemplify properties? A brief background on the current thinking surrounding samples and exemplification is given in Section 3.2, but clearly physical samples like paint chips are not what speakers contribute to a discourse. This therefore necessitates the discussion of a new kind of sample, what I will call *abstract samples*. The nature of these objects is detailed in Section 3.3.

Second, how do (abstract) samples operate within a discourse? The mechanics of discourse-based samples are discussed in Section 3.4, using a variety of data to illustrate the view in action. I argue that the process of exemplification commits the speaker to the characterisicness/representativeness of their generalization, helping to explain some of the IS vs BP contrasts we observe.

Finally, what determines whether a sample is judged as felicitous? I argue that the truth of a given IS generic is relativized to individual perspectives, allowing us to capture the interspeaker variation observed in how IS generics are judged. The intricacies of this are discussed in Section 3.5.

3.2 Samples and Exemplification

You're at the grocery store, navigating through the produce section, when suddenly a staff member at a table gets your attention. Proffering a little paper cup, they ask if you would like to try a sample of a new vegan cheese. Being the adventurous sort and having no loyalty to dairy, you accept. Consider the myriad of properties instantiated by the sample you're holding—*being contained in a white paper cup, weighing precisely 6.42 grams, being orange, being made of cashews, having been prepared by someone named Martha*, and so on. Clearly, this thing you're holding is not meant to be a sample, that is, not intended to *exemplify*, every single property it instantiates. For instance, it is far more likely that it is intended to exemplify *being vegan* and *being manufactured by company X* than it is to exemplify *weighing less than 10 grams*. However, transport that sample to a local museum which specially curates a collection of lightweight objects, and soon its instantiation of *weighing less than 10 grams* could be the only property it exemplifies (in that setting). This context-sensitive dimension of samples means that

knowing how and if a given thing functions as a sample requires knowledge of the system active in a given context, and also the part that sample plays within the system (e.g. “. . .the sampled properties vary widely with context and circumstance”; Goodman, 1978, p. 64, and “an object may be. . . a sample. . . at certain times and under certain circumstances and not at others”; Goodman, 1978, p. 67). Following Goodman (1976), Elgin (1983) discusses exemplification in terms of *labels*, in the sense that when a label is exemplified by an *exemplar* (used synonymously with *sample* “in practical contexts”, p. 73), that exemplar both instantiates and refers to that label. To use her example, if grass is taken (in a particular context) to exemplify the label *green*, then grass refers to *green*.

However, the machinery behind exemplification is not clarified within Goodman’s or Elgin’s work (aside from acknowledging that which properties are exemplified depends on “what particular system of symbolization is in effect”; Goodman, 1976, p. 53):

The properties that count in a purist painting are those that the picture makes manifest, selects, focuses upon, exhibits, heightens in our consciousness—those that it shows forth—in short, those properties³ that it does not merely

³While he initially informally talks of properties being exemplified, Goodman (1976) is careful to distinguish the exemplification of properties (e.g. exemplifying the property of *being red*) and the exemplification of predicates (e.g. exemplifying “(is) red”). He points to a number of “familiar troubles” that come with the notion of properties:

Socrates discussing philosophy in Athens is a rational animal, a featherless biped, and a laughing mammal; but his exemplifying the first property does not imply his exemplifying the other two. Perhaps that is because the three properties, while coextensive, are not identical. But a figure that exemplifies triangularity, though always trilateral, does not always exemplify trilaterality. If trilaterality is not identical with triangularity, what is? And if the two properties are identical, then identical properties may differ in what exemplifies them. We seem to need a different property for every predicate. (Goodman, 1976, p. 54)

His interim solution to the property problem is to talk of symbols as exemplifying *predicates*, however, he notes that viewing exemplification in terms of predicates quickly runs into the issue of being so narrow as to be tied to particular languages (e.g. Plato would say that Socrates exemplifies a corresponding Greek predicate, not the English “be rational”, p. 55). To avoid this issue, he introduces the idea that exemplification is instead of *labels*, with predicates being merely one type of label, that of a linguistic system. However, I fear some of the worries surrounding the exemplification of properties is due to uncertainty with how

possess but *exemplifies*, stands as a sample of. (Goodman, 1978, p. 65)

In exemplification, a symbol highlights some of its own features, and thereby both refers and affords epistemic access to them. (Elgin, 2001, p. 685)

To make the process of exemplification less nebulous, Textor (2008) employs a Gricean approach, arguing that speaker intentions play a large role in how exemplification proceeds. As he writes, “Exemplifying a property involves getting the audience to know which property (kind) is under consideration by using an instance of it with a particular intention” (p. 354). The key idea, therefore, is that samples or exemplars themselves don’t “call attention” to the properties which they exemplify; instead, it is an individual’s *intention* to have a given object exemplify certain properties that allows it to function as a sample. Under this view, exemplification is, on the part of the individual using something as a sample, the *action* of exemplifying a property (p. 351), making it a discourse act in the vein of Grice (e.g. 1975). This therefore shifts the “source” of exemplification off of the object, and onto the intent of the speaker. This idea is also present in Lehrer’s use-based articulation of exemplification (“What does it mean to exemplarize something? *S* exemplarizes *X* if and only if *S* uses *X* as an exemplar of a class of symbols having some role of which *X* itself is a member”; Lehrer, 2000, p. 305).

To make this process more concrete, consider Lehrer’s use-based conception of a case of exemplification originally from Goodman:

If, for example, you ask me what the dance of the *pas de deux* in *Don Quixote* is, and I dance it with Sylvie Guillem to show you what it is, our dancing would be an exemplar of the *pas de deux* from *Don Quixote* representing the other dances of the *pas de deux* by other dancers or, if you

exemplification proceeds as a phenomenon, and not with the notion of properties: after all, why should we expect the exemplification of a property like *being a rational animal* to imply also exemplifying *being a laughing mammal*? Therefore, throughout this thesis, I will speak of samples as exemplifying *properties*, as opposed to labels, precisely because I don’t think that property exemplification actually poses the issues Goodman raises — instead, we need to clarify the mechanisms behind exemplification to assuage his worries.

prefer, representing a certain kind of dance with the role of a *pas de deux* in the ballet. If you understand our dancing in this way, you are treating our dancing as an exemplaric representation of the *pas de deux*. (Lehrer, 2000, p. 305-306)

Here, the event of Lehrer and Guillem dancing the *pas de deux* instantiates the property of *being a pas de deux*. In order for this particular event of dancing to be interpreted as *exemplifying* the property of *being a pas de deux* (as opposed to other properties the event might also incidentally instantiate, like *dancing while wearing red shoes* or *moving within 200m of a cat*) Lehrer and Guillem must intend⁴ for their audience to recover that their dance is specifically exemplifying *being a pas de deux*. A mutual recognition among discourse participants that this property in particular is being exemplified allows the dancing event to function as a sample; crucially, this exemplified-property salience is due to participant intent, and not anything about the dancing event itself.

It is worth noting that Textor takes for granted the fact that a sample exemplifying F *possesses* the property F (e.g. “...something can be exemplary of a property only if it has the property”, p. 354), and also that he does not clarify what exactly qualifies as an “instance” of a kind. While these points certainly seem uncontroversial in the case of “physical” samples⁵ (i.e. those which have some kind of physical form in the ‘real

⁴In cases where an event is used as a sample, the individual intending to exemplarize the event need not be demonstrating the event *themselves* as in Lehrer’s example. Instead, the intention only needs to be in *using* an object as a sample (for instance, someone else could intend to use Lehrer and Guillem’s dance as a sample, with no emplarizing-intention on the part of the dancers themselves). In this way, an individual could *intentionally* use a spasm, for instance, as a sample of an *unintentional* action.

⁵These are not uncontroversial in the case of physical models, however, and perhaps distinguish physical models from physical samples. For instance, consider a miniaturized, plastic model of a Boeing 737. One could imagine an airplane salesman gesturing to the model and saying, “The Boeing 737-800 is approximately 39.5 metres long.” Obviously, this model does not *actually* instantiate *being a Boeing 737-800* or *having a length of 39.5 metres*, but yet it seems to exemplify these properties. In fact, the model might not instantiate a single property of the real thing, aside from a similar (scaled-down) blueprint. I suspect a process similar to meaning transfer (e.g. Liebesman and Magidor, 2019; Nunberg, 1995) is at play with models, whereby exemplified properties of the “real thing” are understood to be *transferred* to the model. This is in contrast to samples, which (typically) directly possess the properties they exemplify. However, a theory of models vs samples is beyond the scope of this thesis.

world’, as opposed to those which exist only in the minds of speakers), how the samples denoted by IS generics *have* properties is not necessarily so straightforward. For this reason, I now turn to a discussion of the nature of abstract samples.

3.3 Introducing Abstract Samples

I propose that IS generic NPs denote samples—however, they clearly can’t denote the physical samples, like free vegan cheese and paint chips, we are familiar with. After all, when one states that *A dog has four legs*, they are discussing something about dog-kind more abstractly, not any individual physical dog (e.g. Buddy the rottweiler, in Omaha) being used as a sample. In light of this, I argue that IS generic NPs denote *abstract samples*, which can instantiate and come to exemplify properties much like physical samples, but are instead mental entities. This results in a crucial divergence from the nature of physical samples: recall that Lehrer (2000) argued that an exemplar must be a member of the class of objects it is serving as an exemplar of (“*X* is an exemplar if and only if *X* stands for a class of objects of which *X* is a member”, p. 305). Abstract samples are clearly not members of the kind they are samples of—for instance, the abstract sample picked out by *a dachshund* in *A dachshund has four legs* is not a member of physical dachshund-kind. Due to the divide between the physical and the abstract, abstract samples need not be members of the kind they exemplify in the direct sense: instead they have a relationship to the exemplified kind much in the same way, for instance, the linguistic unit⁶*dog* relates to the physical dog it picks out (in a denoting context).

The remainder of this section is dedicated to outlining the nature of these abstract samples.

⁶Note that I am not suggesting abstract samples are a metalinguistic phenomenon, e.g. in the vein of Krifka (2013). Abstract samples are mental entities, but are not tied to the *linguistic* meaning/definition of a particular thing.

3.3.1 Instantiating properties

Being mental entities, abstract samples clearly can't instantiate properties in the same way as physical samples. For instance, an abstract DOG⁷ sample can't instantiate *having four legs* in an identical way to any physical dog, simply because dog legs (and the dogs that love them) are physical things which exist outside of our heads. We can thus draw a parallel between abstract samples and arbitrary objects (Fine, 1985), in the sense that they exist only in the "ontologically neutral" (Fine, 1985, p. 6) sense. That is, just in the same way that you can't have tea with Fine's arbitrary men, you can't play fetch with the dachshund sample picked out by *a dachshund* in the IS generic *A dachshund has a long body* (although getting a physical dachshund to play fetch is not much easier).

One hypothesis is that abstract samples, being objects of the mental realm, instantiate the mental analogues of properties we have in the real world. To take an example, while a real-world object might instantiate *being blue* in a very physical sense (i.e. in virtue of reflected light entering your eye), you are still able to picture "blueness" mentally, or at least have some kind of categorical conception of blueness. These mental analogues of physical properties could therefore be instantiated by abstract samples, which are themselves essentially mental analogues of a kind (for instance, Block (1983) calls a mental representation of orange *phenomenal orange*: "when we say a mental image is orange, what is really the case is that it represents something as orange" (p. 516), "[p]henomenal orange represents real orange, just as the orange pigment on a painting represents real orange" (p. 518). In the vein of Block, a property *F* instantiated by an abstract sample would therefore be *phenomenal F*).

The other natural possibility is instead a more quantificational view, which would involve universally quantifying over samples. Take a simple IS generic like that in (35).

(35) A dog barks.

(35) would be true just in case every exemplar-acceptable (or, sample-acceptable) dog barks. How to determine whether a given dog is sample-acceptable, however, is not necessarily clear. One might be tempted to say that sample-acceptable dogs are normal

⁷Throughout, I use small caps to indicate the kind being sampled.

or “ideal” (Eckardt, 1999) dogs, but at that point a sample-based view seems superfluous, and a theory of normality should suffice (see e.g. Nickel, 2016). However, such a view has the benefit of not needing to define a new class of mental entities, abstract samples, and the nature of the properties they instantiate. Distinguishing mental samples from the physical kind members they are a sample of is not necessarily a problem, though; in fact, it serves as a further parallel of physical samples. After all, physical samples are not taken to *be* the things they are a sample of, as Goodman (1978) writes:

Mrs. Mary Tricias studied such a [textile] sample book, made her selection, and orderd from her favorite textile shop enough material for her overstuffed chair and sofa—insisting that it be exactly like the sample. When the bundle came she opened it eagerly and was dismayed when several hundred 2” x 3” pieces with zigzag edges exactly like the sample fluttered to the floor. When she called the shop, protesting loudly, the proprietor replied, injured and weary, “But Mrs. Tricias, you said the material must be exactly like the sample. When it arrived from the factory yesterday, I kept my assistants here half the night cutting it up to match the sample.”

(Goodman, 1978, p. 63)

Thus when we speak of mental DACHSHUND samples almost as proxies for real members of dachshund-kind, there is no conflict, just as there is no conflict in comprehending the divide that exists between a physical sample and the thing it is a sample of. In the same way that Mrs. Tricias is bewildered by the proprietor’s literalness, it would seem absurd to be confused that a physical dachshund is not its linguistic correlate. Abstract samples⁸ are therefore simply one more example of the symbolic nature of language. In this way, something can serve as a proxy for kind members without sharing *identical* properties with those members. Abstract samples instantiate the *mental* (or, *phenomenal*) *analogues* of properties that “real” kind members share, but crucially they do not (and need not) instantiate the physical properties that kind members do

⁸For the remainder of this thesis, I will adopt the abstract sample approach, and will use the term ‘sample’ interchangeably with ‘abstract sample’ for brevity.

(similarly, real dachshunds do not instantiate the mental analogue of *having four legs*, for instance). Determining precisely how these mental analogues of properties are formed is beyond the scope of this thesis, and arguably ultimately unimportant in understanding the central point here: an entity (mental or otherwise) can symbolize something without instantiating *identical* properties to whatever it symbolizes.

3.3.1.1 Aside: Mental representation

If we run with the view that abstract samples are indeed mental entities which instantiate mental analogues of physical properties, there is a sense in which these “abstract properties” are also sample-like in nature. For instance, when you picture “blueness” (or, as Smart, 1959, would argue, the perceived *experience* of blueness), whatever shade of blue springs to mind is, at that moment, serving as somewhat symbolic of “blueness” as a whole. That is, your current mental representation of the property exemplifies *being blue*, such that a single shade stands for the full spectrum of colours which could be categorized as ‘blue’. On the view that abstract samples instantiate samples of properties, we have the potentially nice result of an abstract sample being a sample “all the way down” (i.e. both the sample and all of its properties are samples⁹, meaning they’re all the same “type”).

As an exercise (for those without aphantasia), picture a blue car. At least for me, this mental car is rather nebulous; it has a generally car-like shape, perhaps approaching

⁹If these properties are also samples, we would need to ask ourselves what properties the properties are exemplifying. Perhaps they only vacuously exemplify being themselves (e.g. the property of *being red* exemplifies *being red*). However, it might become difficult to motivate the role of speaker intent in these cases of vacuous property exemplification, and one might need to argue that, by default (i.e. in the absence of clear speaker intent) any given thing *could* be perceived as exemplifying itself. A long-standing debate exists in psychology and cognitive science as to whether mental images are in fact visual, picture-like representations (‘pictorialists’), or if they are instead linguistic descriptions (‘descriptionalist’). Tye (1991) argues for a hybrid of the two views, such that images are “(labeled) interpreted symbol-filled arrays”, whose symbols are ultimately more descriptive in nature, but that each array cell is a spot on the imagined imagistic representation. In this sense, the properties of abstract samples may be more binary, linguistic descriptions (e.g. *having* or *not having four legs*). However, it is clearly outside the scope of this thesis to resolve one of the central questions of cognitive science, and thus the precise nature of abstract samples will certainly be subject to new discoveries concerning human cognition and mental representation.

something like a sedan, but it is certainly not a fixed, hyper-detailed representation of a car. Similarly, the blue paint of this car almost seems to fluctuate, only resting on a particular shade when I try to focus attention on the colour of the car. In cognitive science, it has been suggested that there is an indeterminate quality to our perceptual representations (e.g. Schwartz, 1980) — for instance, picture a tiger. How many stripes does it have? As Dennett (1986) argues, our mental representation of a tiger simply does not contain that information. The takeaway, however, is that our mental representations are intuitively underspecified, and can be enriched or impoverished depending on context (e.g. if I had asked you to picture only a ‘car’, you might not have bothered to devote any mental effort to scrutinizing its colour, or if I had instead asked you to picture a ‘long car’, suddenly its relative size would be a factor. This ability to attend to different regions of a perceptual representation is often discussed in terms of *frames* in cognitive science, see e.g. Barsalou (1992) and Barsalou and Hale (1993) for reviews). Interestingly, it has been argued that images can serve as symbols (see e.g. Schwartz, 1980, who coincidentally links imagery to Goodman’s work on symbolism), perhaps providing evidence for the idea that there is something sample-like about our mental representations and their associated properties.

As a final point on the topic, it is interesting to note that there is some argument for an Agent-driven conception of mental imagery (e.g. “in visual imaging or visualizing, we do not experience mental pictures, but instead visualize an object or scene by mentally enacting or entertaining a possible perceptual experience of that object or scene” (Thompson, 2007, p. 138)). This plays in to the intention-based process of exemplarization; that is, when a speaker sculpts their abstract sample to contribute to the discourse, their “experience” of that sample is driven by their conceptualization of it, which is reflected in the properties they choose to ascribe to it (i.e. have it exemplify). Following the *embodied simulation hypothesis* (see e.g. Barsalou, 1999), which Bergen (2012, p. 13) articulates as “[m]aybe we understand language by simulating in our minds what it would be like to experience the things that the language describes”, we can understand abstract samples precisely as one dimension of this simulation. This ties into the connection between *concept* and *simulator*, as articulated by Barsalou (1999) here:

In this theory, a *concept* is equivalent to a simulator. It is the knowledge and accompanying processes that allow an individual to represent some kind of entity or event adequately. A given simulator can produce limitless simulations of a kind, with each simulation providing a different *conceptualization* of it. Whereas a concept represents a kind generally, a conceptualization provides one specific way of thinking about it. For example, the simulator for *chair* can simulate many different chairs under many different circumstances, each comprising a different conceptualization of the category. (Barsalou, 1999, p. 587)

Following this line of thinking, a sample, as used in a particular discourse, is like a simulation: it is a snapshot of an individual's conceptualization of a kind at that moment. While the speaker's simulation of that particular kind is malleable, they can describe their simulation at that particular moment by ascribing predicates to the sample discussed by a particular IS generic.

3.3.2 Exemplifying properties with abstract samples

Picture a dog. As with the car example, this mental dog you've created might only be roughly dog-like, having the general silhouette of a four-legged canid. It may not even be any particular breed, or perhaps seem like a hybrid of multiple breeds. Running with this intuitive nebulosity of mental images¹⁰, I argue that abstract samples are extremely underspecified in terms of properties, save for those the speaker *intends* for the sample to exemplify. Here is where they crucially differ from "physical samples"—while a physical DOG sample might, in a very real way, also instantiate other non-exemplified properties like *weighing exactly 18.43 kilograms*, an abstract sample does not. That is, an abstract sample possesses only the properties it exemplifies (which will be those explicitly ascribed to it, and (trivially) the property of being a member of whatever kind it is a sample of) and nothing else (much like how cognitive science's *frames* capture the selective attention in our mental representations.)

¹⁰Note that I am by no means insisting that abstract samples *must* have imagistic mental representations, this is merely one way to intuitively get a grasp of them.

As an example, consider a DACHSHUND abstract sample in the context of the utterance *A dachshund has a long body*. The DACHSHUND sample picked out by the DP *a dachshund* possesses only (the mental analogues of) the properties *being a dachshund* (since a sample, to be a sample of its kind, must trivially exemplify the property of being a member of its kind) and *having a long body*, and nothing else. Perhaps your knowledge of dachshunds might cause you to automatically associate other properties with *being a dachshund*, like *having four legs* or *having a tail*, but these other extraneous properties are crucially not exemplified by the abstract DACHSHUND sample, and are merely a byproduct of world knowledge. These additional conceptual associations are therefore akin to the incidentally instantiated but non-exemplified properties of physical samples. To see this, consider a kind that most people might be more ignorant of, for instance, *A quoll has spots*. Just as before, our QUOLL sample exemplifies only *being a quoll* and *having spots*. Any other properties are irrelevant to the construction of the abstract sample, and indeed are irrelevant to comprehending the IS generic.

Here is where abstract samples crucially differ from prototypes: while a prototype comes bundled with a whole host of discourse-irrelevant properties, abstract samples do not. And while it is not clear why or how we are supposed to attend to only some of the properties possessed by a prototype in a given context, exemplification driven by speaker intent in samples provides a clear mechanism for property salience. Being underspecified for properties also means that samples don't run into problems with logical incoherence that have been forwarded against prototypes and arbitrary objects¹¹

¹¹In their introduction to *The Generic Book*, Krifka et al. (1995, p. 47-48) suggest arbitrary objects as a possible way that the prototype approach might be salvaged (by constructing "a "special" exemplar" (p. 47); coincidentally, my sample-based approach fits their suggestion, but just takes it in a different direction). Arbitrary objects, on the view forwarded by Fine (1985), are objects which have only those properties possessed by all of its associated members (termed the *individuals in its range*, p. 9). For instance, a square arbitrary object will have four sides, since all squares (that is, the individuals in the range of our square arbitrary object) will necessarily have four sides, but it won't be red, or sticky, or located in Cincinnati, since despite these properties being possessed by at least *some* square in the world, these properties are not *common* to all individuals in the range. However, when we look at things with properties which are perhaps less clear-cut than a square, some problems present themselves. Critics of arbitrary objects have feared that they are logically incoherent when faced with examples like numbers, for an arbitrary number must either be even or odd, and yet be neither.

(e.g. Fine, 1985) (e.g. as in whether a “prototypical” dog is male or female, or a certain breed, etc.), similar to what Lewis discusses below:

The phrase ‘every pig’ names a different strange thing called the *universally generic pig* which has just those properties that every pig has. Since not every pig is pink, grey, or any other color, the universally generic pig is not of any color. (Yet neither is he colorless, since not every - indeed not any - pig is colorless). Nor is he(?) male or female (or neuter), since not every pig is any one of these.

(Lewis, 1970, p. 52)

While it is impossible to decide if dogs are more prototypically male or female, which leaves a gaping hole in the prototype’s properties, the inherent underspecification of non-exemplified properties in abstract samples means that a DOG sample can comfortably exist in complete genderlessness and avoid any qualms associated with such properties. Furthermore, if a speaker chooses to divorce a distinctive sex-linked trait from the sex itself and predicate it of the kind (as in statements like *A lion has a mane*), they can craft a genderless abstract sample that only exemplifies the property they want it to (see Section 3.4.2.2 for further discussion). In this way, abstract samples are more consistent than prototypes in terms of the extent of their property instantiation, since a sample’s properties are not inherently enriched or impoverished based on more or less

It therefore becomes clear that a theory of generics which employs arbitrary objects is no better off than one that treats generics as universal quantification. To take an example, consider the statement *A dog has four legs*. Under an arbitrary object view, *a dog* would pick out a DOG arbitrary object. Using Fine’s *principle of generic attribution* for arbitrary objects (“that any arbitrary object has those properties common to the individuals in its range”, p. 9), we would take *A dog has four legs* to be true just in case all individual dogs in the range of our DOG arbitrary object have four legs. If *all dogs* are in the range, then this is clearly false, since many dogs possess different numbers of limbs. If we follow Fine’s advice and only consider *normal* dogs to be in the object’s range (p. 43), then we are reliant on a theory of normality to define exactly which dogs are eligible for inclusion. However, if we require a theory of normality to achieve this, it seems the theory of normality is doing all the heavy lifting, making arbitrary objects seem a bit ontologically superfluous. Therefore, it appears that viewing generics as arbitrary objects ultimately falls prey to the same issues possessed by a majority or frequentist approach, since it is essentially universal quantification in disguise, or results in a needlessly overcomplicated view of normality.

world knowledge (a factor which is certainly extraneous to the underlying mechanism of crafting IS generics; their evaluation, however, is a different story, see Section 3.5).

A well-formed sample acquires its exemplified properties in two ways: (i) being overtly indicated through the predicate (e.g. *having four legs* in *A dachshund has four legs*), or (ii) through context (this can be from linguistic context, as in the answer to a question like A: *What has four legs?* B: *A dachshund!* or non-linguistic context). An abstract sample cannot exist independently of a discourse; they are products of speaker intent within a context, and live only as long as they are at issue in the discourse. Therefore, one cannot contribute a property-less abstract sample just in the same way that one cannot simply utter the fragmented DP “a dachshund” in a discourse in any informative way (that is not in answer to a question, or picking out an object, etc).

A clarification of what is meant by saying *a sample exemplifies property P* is in order. Recall that Textor (2008) disagreed with Elgin and Goodman’s idea that samples *themselves* highlight their exemplified properties, instead insisting that *to exemplify* is the *act* of an individual bringing a particular property of a sample-object to salience. The intention of an individual to enforce exemplification is particularly relevant in the case of abstract samples; after all, the sample can’t exist without the act of the speaker. However, once a speaker has enforced that a sample exemplifies a particular property, does that sample *itself* then exemplify that property? This in itself is a debate beyond the scope of this thesis, however throughout I will talk of samples exemplifying properties as shorthand for the act of an individual *enforcing* the exemplification of that property.

3.3.3 From kinds to samples

Just as a physical paint chip is a representation of all the paint produced in a particular variety, an abstract sample can be viewed as a “distillation” of a kind¹².

Consider the property of *being a dog*. This property has a corresponding kind,

¹²This distillation is like a function which transforms a conceptualization of a kind into an individual. Samples are thus distinct from ‘group’ individuals (Landman, 1989; Link, 1984) (cf. Joh, 2020) because they are not even “top-level” taxonomic identifiers of sums or pluralities. Instead, they have undergone a process of transmogrification that has generated an individual entity that represents the kind, but is ultimately distinct. This is not unfounded, however, since physical samples are also not group individuals in any way.

dog-kind. To capture this intuition, Chierchia (1984, 1998) forwards two operators: a ‘down’ operator (\cap) that goes from properties to kinds (e.g. from *being a dog* to the (plural) individual dog-kind) and an ‘up’ operator (\cup) that takes us from kinds to properties (e.g. from dog-kind to the property *being a dog*). In this spirit, I propose a similar operator, \triangleright , which takes us from kinds to samples.

To illustrate this, consider dog-kind. Imagine a world in which there are exactly five dogs and no others, meaning we can represent dog-kind as the set $DOG = \{a, b, c, d, e\}$. To derive an abstract sample from the kind DOG , we can apply our sample operator \triangleright such that, where d_s is a DOG sample, $DOG^\triangleright = d_s$.

The obvious question that arises is what exactly this operator *does*. Essentially, this operator stands for the “distillation” processes that speakers employ to generate samples from kinds; to take a physical analogy, imagine that you are creating samples for a particular paint colour, and to do so you dip your paintbrush in a plumbless vat of the paint, and swipe a stroke on a plain card. In this case, you’ve created a unique instance of that kind of paint, one that you intend to use as exemplary of the rest of its kind. The \triangleright performs a similar role in the abstract: it allows speakers to generate an individuated, exemplar form of the kind in question (the precise mechanics of how this operates will undoubtedly be impacted by the way that kinds are stored in the brain, a topic that cognitive science can weigh in on instead).

Note that the sample operator \triangleright is not necessarily quantificational, and is thus distinct from the generic operator *GEN*. Just as the metrics underpinning sample felicity judgements are subject to interspeaker variation (Section 3.5), so are the mechanics which distill a sample from a kind (this point is also made by Leslie, 2008, who argues that different types of properties demand different ways of generalizing, with some being striking, quantificational, characteristic, etc. Bosse, 2021a, also believes that generalizations can have truthmakers of “different quantificational strengths and flavours like the fact that most dogs bark, but also other facts, such as that barking is characteristic of dogs, or that more dogs than cats bark”; p. 14384). The crucial point, however, is that \triangleright can “carve up” the properties associated with members of a given kind in different ways, and that there is speaker *intent* in how these are deliberately carved up (similar to Sterken’s (2015) argument that speaker intent provides a generalization to value *Gen*).

As an example, consider a man who utters something like *A woman is just too submissive to work outside the house* (cf. Haslanger, 2011). Perhaps he feels it is acceptable to utter this in a context where he is only in the company of other men he believes share similar views, but he is hesitant to say it in front of women. His differing judgement of this same generic has to do with how he samples his concept of woman-kind, judging the same “carving-up” of the kind to be felicitous in one case, but not in another. For instance, when only men are present, he’s content to sample based on what he perceives as a striking property (perhaps in comparison to men), but in the context of women being present, he might become aware of the finer-grained nature of personalities within woman-kind, making his attempt to sample in the way he previously did conflict with his quantificational knowledge of the kind. The way that this carving is conducted might well be subject to interspeaker variation, but evaluating the reality of this possible interspeaker variation in \triangleright would require empirical study. In any case, regardless of the mechanism the speaker uses to carve up kind members and their associated properties, the process of generating a sample from (a speaker’s conception of) a kind is captured by the \triangleright operator. It therefore serves as a blackbox for the process of arriving at a generalization, a process which is ultimately extraneous to grasping the sample picked out by an IS generic. This leads me to a crucial point of my view: while others argue for IS generics only being able to express certain *types* of generalizations (e.g. those that are non-accidental, definitional, etc.) a sample-based account does not discriminate, allowing a property arrived at via any kind of generalization to be exemplified. This means that the oddity of some IS generics stems not from the type of generalization, but rather from how that generalization might be *judged*. This is a pragmatic oddity that is a result of IS generic *use* and how others perceive speaker commitment to the generalization, but not samples themselves.

For the sake of simplicity and more streamlined typography, I will not continue to explicitly use this operator for every mention of sample-generation: simply keep in mind that it is operating in the background.

3.4 IS Generics as Abstract Samples

Now that I have established some of the mechanics of abstract samples and why we should prefer them over things like arbitrary objects or prototypes, I will turn to their role in IS generics. Here, I elaborate on the basic idea that IS generic NPs denote abstract samples by discussing their role in discourse using a variety of IS generic types (e.g. minority generics, *popular* generics, etc). Crucially, I argue that denoting samples is the primary thing which differentiates IS generics: while previous theories always have gaps in their data coverage by attempting to distinguish IS generics from BP generics based on the *type* of properties they're able to discuss (e.g. non-accidental, definitional, analytic etc.), I argue that IS generics can express *any* type of generalization, and instead have a different underlying mechanism (samples). Contrasts with other generics thus have use-based explanations for how IS generics are judged within a discourse.

3.4.1 Use in discourse

Uttering an IS generic is an act which serves to introduce an abstract sample to the discourse. By doing so, the speaker (a) specifies exactly those properties which they intend (cf. Textor, 2008) their abstract sample to exemplify, and (b) attempts to *enforce* the idea that their abstract sample exemplifying the ascribed properties is a “good sample”¹³ (assuming the speaker is cooperative). One expects a “good sample” to be representative of the thing it is a sample of: the kind it is distilled from. By ascribing properties to the sample picked out in an IS generic, the speaker insists that those properties are in fact characteristic or reflective of the kind, and the speaker is *committed* to that characteristicness within the discourse.

By shifting the judgement of what counts as characteristic to the speaker, we are able

¹³This appeals to a notion that appears throughout the IS generics literature, for instance, generalizations being characterized as a “good possibility” (Greenberg, 2003, p. 109) or not “too odd to be a potential rule” (Cohen, 2001, p. 199). There is something intuitive but inherently unsatisfying about simply relying on “common sense” to make such judgements, after all, what counts as “common sense” is hardly consistent within a population. Because of this population-wide inconsistency, I relativize samples to individual perspectives (cf. Mari’s (2008) *judge parameter*). I also endeavour to sketch an account of how this “common sense” might be operating in 3.5.4.

to avoid the unsatisfying reliance on “common knowledge” or the “speaker community” that other theories of IS generics suggest, as well as explain why there is interspeaker variation in judging IS generics. Treating IS generics as discourse acts also helps to distinguish them from BP generics: while the latter can simply point out that some general pattern exists, the crucial role of speaker intent and judgement in how kind properties are distilled commits the speaker more to the “characteristicness” of their claim, approaching something like quasi-universal quantification¹⁴. To put it another way, BP generics are like a table of data potentially without any provided interpretation, whereas IS generics are like an advertisement, biased just as any advertisement is, for the rest of the kind.

To get an intuitive grasp of what distinguishes a “good sample” from a bad one, consider what qualifies as false advertising. When a product is advertised, we expect the representation of that product to be reflective of the actual thing. That is, the properties exemplified by the advertised representation of the product are expected to be homogeneously possessed by other instances of the product. In addition, clearly defective products wouldn’t necessarily make the advertising seem misleading (just as abnormal instances of a kind, like a five-legged dog, don’t serve as counterexamples to a generic), but being able to judge what is a defect vs what is false advertising would require greater exposure to the product (i.e. if one had only encountered exactly one instance of the product, and it was a defect, they might think this was a case of false advertising). This is precisely how abstract samples operate in a discourse: if a property is ascribed to the abstract sample, it is meant to suggest that that property can *feliculously* be exemplified by the sample, presumably because it is characteristic, typical, etc. of what you observe in members of the kind (at least according to the speaker’s perception of the kind), but if the listener is unfamiliar with the kind, their ability to judge a false characterization of the kind is impoverished (more on this in Section 3.5).

¹⁴Note that I am by no means suggesting that samples have any kind of inherently quantificational nature, but rather that they *can* have this flavour in a discourse. This greater commitment on the part of the speaker captures the observation that IS generics “sometimes have the flavor of universally quantified sentences” (Krifka et al., 1995, p. 4). Naturally, however, IS generics with explicit modals (e.g. *should*, *can*) or adverbs of frequency (e.g. *often*, *typically*) will alert the listener that the exemplified property has “weaker” exemplification, or “idealized” exemplification.

While speakers must be committed to exemplified-property characteristic-ness, I want to be clear that the speaker need not have any kind of explanation in mind for *why* the property can be exemplified. This is a crucial difference from a theory like Greenberg's (2003), whose "in-virtue-of" properties require that the speaker "[have] in mind some appropriately chosen property or aspect of our world, in virtue of which the generalization they express is true" (p. 52). Furthermore, these must be recovered by the listener: "It is clear that even somebody who knows nothing about genetics will take A dog has four legs to be true. In such a case he will accommodate another "in virtue of" property which will make the sentence true." (ft. 9, p. 83). My view, while insisting that there be some speaker intent behind crafting the abstract sample (which is not unreasonable, given that there is likely *some* intention behind uttering something in the first place) does not require speakers and listeners to have any kind of explanation associated with the generic. After all, the ability for a sample to exemplify something does not rely whatsoever on knowing *why* it exemplifies that.

Before moving on, I want to clarify what exactly I mean when I talk of discussing samples. When we utter IS generics like *A dachshund has four legs*, we are not directly discussing dachshund-kind, but rather the abstract sample *distilled* from dachshund-kind. Of course, this abstract sample is inextricably linked to dachshund-kind (it could not exist without it, and the way we build the sample will be solely informed by what we observe (and how we interpret) properties instantiated by members of dachshund-kind), but nevertheless we are discussing an abstract representation of a kind (note that this is an abstract cognitive representation of a kind, and not a definition—abstract samples are not a metalinguistic phenomenon). Now, that abstract representation *does* instantiate (the mental analogue of) *having four legs*, allowing us to felicitously talk of that sample being a quadruped. However, because there is such an intimate link between kinds and their samples, it seems very much like we are discussing the kind simultaneously (and, in a sense we are, because we are discussing the kind's symbol). To put it in terms of physical samples, if a paint chip is blue, and we talk of that particular paint being blue, we are in a sense discussing both the sample and the vast oceans of paint it symbolizes at once.

However, samples are still samples, and not the kind they symbolize. Let's first

consider physical samples to get a sense of the nuance in how samples are discussed: suppose you're looking at a paint chip for *Pangolin Greige*, and the paint store clerk informs you, pointing at the paint chip, that "This is very popular." Naturally, when they utter this, you take them to mean that the paint *symbolized by that sample* is what is popular¹⁵, not that the cardboard square you're holding is the popular thing. However, the lovely gruel-y shade it exemplifies, something the sample directly possesses, *is* popular. So, the cardboard sample is popular in the sense that it symbolizes the popularity of the rest of its kind, but the sample itself is not popular. This distinction is even trickier for abstract samples, since we do not have the obviously distinct physical form. However, the same is true in the mental realm: the abstract sample can instantiate the property *being popular* in virtue of its kind members also doing so, but the *sample itself as a sample* is not popular (this allows us to avoid the very strange reality where an individual's mental representation of a kind is somehow itself popular). Just as it is odd to say of a paint chip, "This is popular and square", it would be odd to say "A dog has a tail and is a mental representation". That is, while samples "have" the properties of the kinds they symbolize, they are still ultimately a distinct thing: a sample.

3.4.1.1 Prescriptive flavour

It has been frequently noted in the literature that some IS generics have a uniquely prescriptive flavour. For instance, imagine you're at a formal dinner, and the young boy at your table surreptitiously brings out a little half-dissected frog. He intently prods at it until his grandma, voice shrill with shock, chastises, "a gentleman does *not* conduct dissections at the dinner table!" Here the grandma's utterance serves to instruct, or *prescribe* what the boy's behaviour should be. While a slightly cliché method of argumentation, let's first consider the definition of *prescriptive*:

prescriptive *adj* **1.** relating to the imposition or enforcement of a rule or method (Google English Dictionary, from Oxford Languages) **2.** making or giving directions, rules, or injunctions (Collins) **3.** authoritative; laying

¹⁵I believe that this interpretation is available through a process of meaning transfer. See Nunberg (1995) and Liebesman and Magidor (2019) for further discussion of the phenomenon.

down rules (Chambers)

From these few definitions, we see that the act of “laying down” or “enforcing” something is at the heart of prescriptivism. Abstract samples are equipped to do precisely this: since the speaker crafts their sample to exemplify a particular property, they serve to *enforce* that that property is indeed a characteristic property of the kind. Closely related to prescriptive generics are *normative generics*, which (intuitively) serve to express a “norm”. In her discussion of normative IS generics, Hesni (2022) adopts a metalinguistic view, stating that “A normative generic assertion of ‘*An F is G*’ is a proposal to restrict the usage of ‘F’ to things with property G.” Working with this definition, this means that (to use her example) if a boy x cries, then uttering *A boy doesn’t cry* says that x should not be *called* a boy. In her words: “According to a metalinguistic view, what we’re doing when we utter these sentences is proposing that [the ascribed properties] ought to be definitional properties of the terms in question.” The spirit of this view can be easily extended to a sample-based account: when a speaker asserts an IS generic, they introduce a sample to the discourse that enforces the exemplified property is characteristic. In this sense, every IS generic is “normative”, it’s just that some norms are far less controversial than others. Since any sample is crafted based on an individual’s conception of a kind, speaker bias and point of view are “baked in” to every sample. It is only when the exemplified property diverts from world knowledge that listeners register the IS generic as prescriptive. That is, the speaker may not intend the generic to be prescriptive, but it can still be perceived as such. Let’s walk through a couple examples.

A dog has four legs. This is not obviously prescriptive, but it still does serve to enforce a norm about how dog-kind is conceived, even if it is an empirically-based conception. The speaker contributing the DOG sample which exemplifies *having four legs* views the property as a salient dimension of dog-kind, but it just happens to be a supremely uncontroversial view of dog-kind.

A gentleman doesn’t conduct dissections at the dinner table. In this case, we have an obvious divide between who *should* be categorized as a ‘gentleman’ (the boy conducting

the dissection) and the enforced conception of that kind (coming from the grandmother). Because there is this divide perceptible to discourse participants, *the generic is perceived as prescriptive*. There is nothing special about this perceived-as-prescriptive sample compared to the one of the uncontroversial four-legged dog. Instead, the prescriptiveness stems entirely from the context the sample is situated in, and how the audience interprets its use. From the grandmother's perspective, the boy's behaviour likely prompted her to use a sample asserting her particular conception of a kind, to achieve a persuasive or instructing (see Hesni (2021)) effect.

However, my view diverges from Hesni's in that I do not see IS generics as a fundamentally metalinguistic phenomenon. I hold that they express speaker perspectives on kinds, but not *definitions*. After all, it seems bizarre to think that *not conducting dissections at the dinner table* should factor in any way into the *definition* of the term 'gentleman'. However, it does seem likely that it factors into our conception of the *kind*.

While this may belabour the point, consider another situation: Eddy Coli has strong opinions about burgers. While at a party in his local trailer park, Eddy is served a well-done burger. Upon biting into it, he scoffs, crumbs flying from his moustache, "*A BURGER is served rare*" to mean that a *real* burger is served rare, and that this *...thing* he's holding is *not* a burger. In this case, because of the divide between an instance of the kind and his conception of the kind, it is *perceived as prescriptive* by listeners (and also has prescriptive intent on Eddy's part). However, on another day when he's hanging out with Bobby and Daryl, fellow men who like a burger to be rare, his utterance of "*You know, I don't say it enough: a burger is served RARE*" is met with nods of beer cans and murmurs of *ain't that the truth*. This particular audience would not perceive the utterance as prescriptive, instead thinking it is simply true. The same goes for any generic that is not obviously prescriptive, it's just when it comes to that particular kind in relation to that particular property, you agree.

In short, I think there is a case to be made that practically every generic is normative, it's just that some norms don't strike us as "normative" because they are so accepted. And samples, being a distillation of speaker perspective regarding a given kind, give us a mechanism to capture this.

3.4.2 Case studies

To make these ideas more tangible, let us turn to some examples.

3.4.2.1 Uncontroversial IS generics

First, some IS generics that are very likely to be judged as unanimously felicitous:

- (36)
- a. A dachshund has a long body.
 - b. A Kirtland's Warbler is grey and yellow.
 - c. A wood frog is able to freeze during the winter.

In uttering (36a), for example, a speaker does two primary things: first, they contribute an abstract sample to the discourse, which instantiates (the mental analogues of) the properties *being a dachshund* and *having a long body*. This is a somewhat nebulous dachshund that has been contributed: for all intents and purposes, we have no idea what colour the dachshund's eyes are, how many hairs are on the dachshund's body, or whether or not the dachshund is missing some limbs. After all, this abstract dachshund sample is intended to only exemplify "long-bodied-ness". Second, by contributing this abstract sample to the discourse, the speaker is attempting to enforce the idea that "long-bodied-ness" is a property that can be felicitously instantiated by a DACHSHUND abstract sample; that is, "long-bodied-ness" is reflective of what is observed for members of the kind. Whether or not it is *actually* reflective of members of the kind (i.e. in the real world) is almost beside the point—the speaker is simply trying to enforce that this is the case within the discourse, according to their perspective.

Despite speaker perspective being baked into every IS generic, (36a) is judged as felicitous and true precisely because it uncontroversially aligns with common world knowledge¹⁶. However, the fact that this is the case is not necessarily something a theory of IS generics need be concerned with. After all, I'm not attempting to build a

¹⁶The idea that definitional properties are simply more likely for IS generics, but not necessary, is also expressed by Mari (2015) "Well-established categorizations have turned into definitions, and thus, in the absence of a context that allows categorizing entities in new ways, so called 'definitional' properties are preferred [for IS generics]" (p. 282).

theory of how world knowledge is used in discourse, for the moment I am only trying to outline what IS generics *themselves* contribute to a discourse, regardless of whether or not they are actually judged as true. (Consider a completely nonsensical IS generic like *A murple is spedatious*. Is this generic felicitous, or true? There is a sense in which it doesn't strike us as *infelicitous per se*, simply because we lack world knowledge to fully evaluate it. Nonetheless, this IS generic serves to contribute a MURPLE abstract sample, which instantiates the property *being spedatious*, and enforces that *being spedatious* is a property that can be felicitously instantiated by a MURPLE sample, suggesting that the property is characteristically possessed by members of the kind. The ability to separate the mechanics of IS generics themselves, in discourse, from their truth evaluation, is therefore a crucial component of this view. This will be discussed further in Section 3.5.)

Once a sample has been introduced to a discourse, other discourse participants can make reference to it. Consider the following exchange:

- (37) A: A dog has four legs.
B: It sure does, Sherlock.
- (38) A: A man can't live on cheese alone, Charlie.
B: Yes he can, and I'm living proof!

The entity picked out by the indefinite singular DP in an IS generic can be referred to, in subsequent utterances, with a singular pronoun like *it* or *he*¹⁷ (note that since IS generics with a pronoun subject are not of the form *An F is G*, they are exempt from condition (i) of (IS-SAMP) and do not introduce a new sample to the discourse). The fact that such pronominal reference can be made within a discourse demonstrates a clear advantage of a sample-based account, since it provides something to actually refer to. In

¹⁷It does seem possible to also use plural *they*. For instance, A: *A dog has four legs*. B: *Yes, they do*. Despite the base number incompatibility, I suspect this comes from the awareness that IS generics really express things about kinds, allowing one to “transfer” the plurality associated with kinds, or shift back up (see Section 3.3.3) to the kind for a subsequent utterance. I see this as another advantage of a sample-based account: since there is such a close association between a sample and the kind it is derived from, it is perhaps unsurprising that speakers would comfortably shift up or down between kinds and samples. In contrast, there is no clear mechanism for why a rule or definition should see this variation in number showing up on the pronoun.

a rule-based or definitional approach, it is not clear what entity is available to be picked out by a pronoun (if rules really are the topic as Cohen suggests, perhaps the pronoun picks out the rule, but then it seems we have a conflict for which rule is the topic in the new IS generic with the pronoun, resulting in potentially infinite nestings of rules). The gender of the pronoun also reflects properties of the sample: since a DOG sample is genderless (unless being forced to exemplify a particular gender for some reason), *it* seems the natural choice. Similarly, since a MAN sample must exemplify *being a man*, a property that is inherently male¹⁸, the masculine pronoun is used. Samples therefore provide a clear entity that can be at issue in the discourse in the ways that we observe.

There are also cases where multiple speakers could use the full DP for every IS generic, as in “echoed” agreement (e.g. *A: A dog barks. B: That is correct, a dog barks*) or when “adding on” to a description of a kind (e.g. *A: A gibbon has very long arms. B: Yes, and don’t forget that a gibbon also has lovely silky fur*). Let’s revisit (i) of (IS-SAMP):

(IS-SAMP) An IS generic of the form *An F is G* uttered by speaker *S* and attended to by audience *A* is true relative to a context *C* iff

- (i) there is an *F* abstract sample which exemplifies *G*-ness, as enforced by *S*, which *S* has contributed to the discourse (unless an *F* abstract sample is already at issue) . . .

Note the clause *unless an F abstract sample is already at issue* in (i). Without this, both speakers *A* and *B* in the previous examples would introduce their own sample, derived from the same kind, to the discourse, which seems like a redundant and odd result. Instead, we can say that once a sample has been contributed to the discourse, it can be “modified” by a participant during their turn in the conversation. This modification could simply be an affirmation of the sample’s felicity (as in the echoed agreement case), or it could be the addition of a new exemplified property (for instance, in the second case, speaker *A* would contribute a GIBBON sample exemplifying *having very long arms*, and

¹⁸You might disagree, and say that a man can use any pronoun they want. You would be correct, and also be providing a nice example of how kind conceptions differ between individuals, and how there can be speaker disagreement about IS generic felicity.

during speaker B's turn they would add the exemplified property *having lovely silky fur*.) These "added on" properties are cumulative if they are accepted by all discourse participants, but a given property could always be rejected (for instance: . . . B: *Yes, and don't forget that a gibbon also has lovely silky fur. A: No, a gibbon has coarse fur!*). While the rejection of a property might not change an individual's conception of a kind (e.g. speaker B could still silently believe that gibbon fur is unparalleled in its silkiness), the discourse sample is nonetheless modified. This parallels physical samples—imagine two salesmen accosting you with a sample of foam. Once they've got it in your hand and convinced you to give it a squeeze, one says, "It's soft enough for baby-proofing your house!" before the other adds, "*and* it's got a lemony-fresh taste that babies just can't get enough of!" Both salesmen here are making reference to the same physical foam sample you have in your hand, each adding on exemplified properties. Abstract samples which are at-issue and part of the Common Ground can be modified in just the same way.

3.4.2.2 Minority generics

Let us now consider some generics which are classic exceptions to the frequentist or probabilistic view of genericity: cases where a minority (or at least not the majority) of kind members possess the ascribed property. For instance,

- (39) a. A tick carries Lyme disease.
b. A lion has a mane.

In cases where a minority of kind members actually possess the property (39a) or where the property is sex-linked (39b), there is no clear majority that should make the generics true (on a probabilistic approach). However, given that the abstract sample view is non-quantificational, minority generics pose no issue. Just as in any other IS generic, the speaker introduces an abstract sample to the discourse (in this case, a TICK abstract sample and a LION abstract sample) and enforces that they exemplify *carrying Lyme disease* and *having a mane*, respectively. Accepting such samples as "good samples" requires a bit of a departure from our scientific understanding of the world, however. After all, as has been oft pointed out, only a small minority of ticks actually carry Lyme

disease, and only male lions have manes. I take inspiration from Leslie (e.g. 2008) in that properties being relatively “striking” facilitate such generics. There are many reasons why a speaker may view a given property as “characteristic”, and being striking certainly seems like a good candidate for informing characteristic-ness (this will be elaborated in section 3.5.4). Take (39a). With the TICK abstract sample, exemplifying *carrying Lyme disease*, the greater speaker commitment demanded by IS generics elevates the property to a characteristic one, which serves to communicate something along the lines of “treat every tick *as if* it carried Lyme disease”. The inherent danger associated with the property makes it a good candidate for exemplification, and for falsely attributing it to every arbitrary instance of the kind (in this way, an IS generic is perfectly suited to serve as a warning, or cautionary PSA — *ticks, not even once.*)

Sex-divorced traits like that in (39b) can be easily accommodated by abstract samples without any logical incoherence, as the speaker must simply introduce a LION abstract sample to the discourse, exemplifying only *having a mane* and (trivially) *being a lion*. Crucially, this LION abstract sample need not have any kind of specification for gender. This highlights just how flexible abstract samples can be by virtue of their underspecified properties. Again, however, not all speakers are willing to accept certain cases of underspecification. I believe that these objections rest more in how properties relate to kinds (in a given individual’s mind) than anything to do with IS generics, however. For instance, the speaker who disagrees with (39b) would hold that manes are a kind of thing which can’t be possessed by gender-unspecified lions. If we create a generic concerning sex-linked traits for a kind that people are more likely to think about in greater demographic detail (e.g. humans) the true reading is much harder to arrive at.

(40) A human has ovaries.

For those who find (40) strange, it is because *having ovaries* is not a property that a gender-unspecified human can have.

This property underspecification leads to what I’ll call *kind opacity*, wherein all internal demographic information for a kind is collapsed and obscured (e.g. through obscuring gender distinctions internal to the kind, samples allow you to create a genderless lion exemplifying *having a mane*, such that you’re predicating the property of

a more *opaque* view of the kind). Since we are further removed from other animals and as a result perhaps take a less fine-grained approach to our perception of their properties, kind opacity seems to be more readily available for non-human kinds, facilitating underspecification of properties like gender for some speakers (contrast (40) with (39b)). However, we can force kind-opacity even for humans, especially in cases of contrast which make the relative strikingness of a property at issue, facilitating the generic (e.g. (40) compared to *A human has ovaries, but a sandwich does not*). Teasing apart exactly which properties resist underspecification in this way and how this varies between speakers (e.g. in the case of *A duck lays eggs*, some may object with *well, only a female ducks lay eggs*, while others would view that objection as needlessly pretentious), requires empirical study.

3.4.2.3 Popular generics

Some properties, of which *being popular* is probably the most frequently cited, are perfectly acceptable with BP generics, but not with IS generics. Consider (41), perhaps in a context where pet ownership trends are being discussed.

- (41) a. Dachshunds are popular in Germany.
 b. # A dachshund is popular in Germany.

While a generic interpretation is readily available for (41a), it seems that (41b) demands an existential interpretation (i.e. where a singular dachshund, perhaps Waldi, is beloved by all of Germany). This is because, based on world knowledge, every individual dachshund is not popular. Therefore, it seems infelicitous for our DACHSHUND sample to exemplify *being popular*, since it is simply not reflective of kind members (“but wait!” you might object, “my precious Papillon is adored by anyone he meets!” While some members of dachshund-kind may be gifted with charisma in spades, I still hold that it is not a property we associate with individual kind members for dachshund-kind *as a whole*. Their status as a pet rather than an individual, however, *is* popular, leading to the felicity of *A dachshund is a popular pet*. See Section 3.4.2.4 for further discussion). In contrast, when we are discussing *individuals* which are popular in and of themselves, the generic is felicitous.

(42) a. # A dachshund is popular.

b. A prom queen is popular.

Also: *A football hero is popular* (Nunberg and Pan, 1975)

Since popularity is possessed by individuals of the prom-queen variety, the PROM QUEEN sample is free to exemplify *being popular*. In contrast, since *popular* in the dachshund case targets the kind-level version of popularity, and not the individual-level of popularity, we cannot felicitously have our (singular) DACHSHUND sample exemplify *being popular*, since the relevant sense is not instantiated by individuals.

3.4.2.4 Definiendum-definiens IS generics

As has been noted by e.g. Cohen (2001), examples like (41b) # *A dachshund is popular* (in Germany) are greatly improved by including a definiens, as in (43).

(43) A dachshund is a popular pet.

Burton-Roberts (1976) considers the use of COP *a* or ‘attributive indefinite article’ (here, *a popular pet*) to be the same as GEN *a* (here, *a dachshund*). Specifically, he suggests that both stand for ‘concepts’, as opposed to individuals¹⁹. If we are to follow this line of reasoning (i.e. that COP *a* and GEN *a* are equivalent), then it seems that both DPs should denote samples. In cases like this, the speaker is thus introducing multiple samples to the discourse (here, a DACHSHUND sample and a PET sample, exemplifying *being popular*). In cases where the predicate contains a sample, this sample may vacuously exemplify being itself (e.g. *a pet* exemplifies only *being a pet* in *A dachshund is a pet*) or it may exemplify other properties if explicitly identified (e.g. *a popular pet* exemplifies *being popular* and *being a pet* in *A dachshund is a popular pet*). In light of this, however, we must ensure our theory includes two things: that there can be any number of unique samples active in the discourse (i.e. there is not a maximum of one

¹⁹This GEN indefinite article is thought to be derived from an analytic deep structure (for instance, *a dachshund* is derived from *to be a dachshund*, leading to the underlying structure of something like *A dachshund is a dog being To be a dachshund is to be a dog*. See Section 2.1.1 for discussion of some of the pitfalls of this view.

sample allowed) and that predicates can contain samples (e.g. *be a popular pet*). See Section 4.2 for further discussion of ISs in object position.

Definiendum-definiens IS generics allow us to discuss equivalency and type-of relationships between samples. First, equivalency: consider a tautology like *A dachshund is a dachshund*. Here, the subject DP would introduce a DACHSHUND sample, and since a DACHSHUND sample has already been introduced to the discourse, the object DP denotes the same sample (see (i) of (IS-SAMP), “. . .an F abstract sample which exemplifies G-ness. . . has [been] contributed to the discourse (*unless an F abstract sample is already at issue*). . .). This allows us to capture the redundant flavour of *A dachshund is a dachshund*, essentially saying “*A thing exemplifying ‘being a dachshund’ is a thing exemplifying ‘being a dachshund’*”. Next, a type-of relationship: consider *A dachshund is a mammal*. Here, two unique samples are introduced: a DACHSHUND sample, exemplifying only *being a dachshund*, and a MAMMAL sample, exemplifying only *being a mammal*. The verb ‘*is*’ serves to identify that the first sample is a type of the second sample (even equivalency cases can be seen as ‘type-of’ relationships, it’s just very boring to be a type of yourself).

Identifying a second sample in a type-of relationship can also ameliorate ascribing more kind-level properties in IS generics. Consider the following contrasts:

- (44) a. # A mosquito is widespread.
- b. A mosquito is a widespread pest.
- (45) a. ??? A dog is common.
- b. A dog is a common pet in American households.

Being widespread and *being common* are not really things that can be accomplished by individuals (unless we are dealing with some kind of hive-mind that can spatially distribute its members, but I digress). However, if we identify a broader taxonomic kind (the understood implication likely being that broader classifications have multiple members), suddenly we can more easily ascribe a property typically only had of pluralities to a singular individual. There is nothing special about these plural-individual samples; instead, our ability to accommodate the more plural property stems from how

we conceptualize things like pest-hood and pet-hood. Admittedly, sentences like *A mosquito is a widespread pest* are still a bit odd, likely because of a fundamental number incompatibility (e.g. it seems much more natural to say *Mosquitoes are a widespread pest*). Note, however, that even in the BP case *pest* can remain singular, signalling the unique plural-individual status that comes with our conceptualization of pest-kind. The kind's inherent plurality, even as a singular, thus makes it easier to accommodate a plural property like *being widespread* or *being common*. So, since the kind-level sense of *being popular* is targeted in *A dachshund is a popular pet*, the type-of relationship helps repair the number incompatibility of a kind-level property with a singular individual.

3.4.2.5 IS generics in questions

Previously, I pointed to IS generics in questions as a worry for Greenberg (2003) - after all, if one can inquire about the reason motivating a particular property (e.g. *why does an American eat so much peanut butter?*), they can't really have one in mind. However, this raises the question of how samples function in such cases.

Let's consider two kinds of questions, ones that inquire about the reason behind a particular exemplified property, and others which ask if an exemplified property is the case.

(46) Why does a dachshund have such a long body?

(47) Does a dachshund have a long body?

Their use in questions indicates that samples can be employed in different speech acts (Searle, 1969): while I have only been discussing samples contained in assertions so far, which attempt to replicate the speaker's belief that the contributed sample is indeed a good sample in the listener's mind, samples can also be contained in questions. In (46), just as in any other case discussed so far, the questioner contributes a DACHSHUND sample, exemplifying *having a long body*, and uses this to ask about the mechanism underlying the exemplified property. Note that the speaker still believes this to be a "good sample" - the status of the property relative to the kind is not at issue, but rather what *causes* the property (the answer to such a question can be likened to "in-virtue-of" properties (Greenberg, 2003) or explanations (Nickel, 2016)).

In contrast, (47) asks whether the sample contributed to the discourse is a felicitous sample—that is, the speaker asks if their DACHSHUND sample can felicitously exemplify *having a long body*. While the process of sample construction is the same, this illustrates how samples need not be confined to assertions, and can additionally have their integrity interrogated as part of a speech act.

3.4.2.6 Average generics

An additional subset of IS generics modify the IS with an adjective like “average”:

(48) An average unladen swallow²⁰ typically flies at 11 metres/second.

While they do not discuss IS ‘average’ generics specifically, Kennedy and Stanley (2009) forward a convincing view that (definite) ‘average’ generics like those in (49) are *averaging expressions*, rather than referring expressions which refer “to bizarre individuals or [involve] predications of odd properties” (p. 631), like having 2.3 children. That is, they argue that the definite description *the average American* does not pick out any singular ‘average American’ individual (unlike other definite descriptions like *the flamboyant butcher on 33rd* or *the dog in my closet with too many legs*).

(49) a. The average American has 2.3 children.

(Kennedy and Stanley, 2009, p. 587 (1a))

b. . . the average German sees his doctor 13 times a year, the average Swiss sees his doctor 7.5 times a year and the average Briton 3.5 times.

(Kennedy and Stanley, 2009, p. 588 (2a))

Furthermore, they distinguish “concrete” average (50), which has a sense more like ‘typical’ (and can easily be replaced by it), from “abstract” average (51), which like those in (49), express the result of an averaging function.

(50) a. The average New Yorker is stressed out.

b. The typical New Yorker is stressed out.

²⁰European, obviously: <http://style.org/unladenswallow/?none>

(51) a. The average American has 2.3 children.

b. # The typical American has 2.3 children.

They also state that the determiner, *the*, is semantically vacuous, and that the adjective, *average*, incorporates into determiner position at LF, making the surface realization of ‘the’ something of an expletive. Since the expression picks out a unique degree (i.e. the average), the fact that it surfaces with definite features makes sense. However, what about IS average generics? Since these also feature the adjective *average*, it seems we should also expect it to incorporate into determiner position. This means that somehow we are getting two different expletive determiners, with no clear motivation for why that should be the case.

However, I argue that IS average generics are not “genuine” average generics (unlike definite average generics). Specifically, I think they can only express “concrete” averages²¹, and that any seemingly “abstract” averages are the result of a forced inter-

²¹For a “folksier” expression of concrete averages (and other IS generics), you can also use *your* instead of *a(n)*:

(a) . . . your average American male is in a perpetual state of adolescence, you know, arrested development.

(*Arrested Development* S03E03, “*Forget Me Now*”)

Kirkpatrick et al. (2021) argue that bare impersonals (e.g. *In the UK, you drive on the left-hand side*) are IS generics. While they do not discuss possessive forms of the pronoun specifically, the idea certainly seems to extend (or even manifest most clearly) in the case of *your*. However, its distribution is limited to very specific contexts and constructions, moreso than bare impersonals more generally: note the oddity of expressing generally well-accepted facts, like *???Your dog has four legs* (this is only possible with very specific intonation, in an appropriate teaching context, e.g. “This here spider has got eight whole legs. Now, your *dog* on the other hand, he’s got four legs”). Adjectives that express “commonness” or “approachability” of the nominal in question typically improve the construction immensely (note again that this is not necessary however, especially in the case of objects in a sentence with a preceding impersonal subject—imagine you’re overhearing a small town mechanic describing a recent job to another person in the town, and they say, “you know, you need your carburetor to be in working order, but theirs was totally busted.”):

(b) Your average/typical/run-of-the-mill dog has four legs (our lab-grown dachshunds, on the other hand...).

(c) Joe couldn’t be the murderer, he’s just your friendly neighbourhood postman!

I suspect that, just as with other IS generics where there is a conflict between an existential and generic interpretation, here we have a conflict between an impersonal *your* and a literal addressee-referring *your*.

pretation. At least to me, there is something slightly “off” about IS average generics like the following which express properties which can’t be held by any real individual:

- (52) a. ? An average American has 2.3 children.
b. ? An average American household has 2.2 cats.

The sentences in (52) are not uninterpretable largely because of the inclusion of *average*, allowing the addressee to recover a meaning that would have been typically expressed with the definite generic. Some other IS average generics might seem less deprecated because they can more feasibly be properties possessed by singular²² individuals:

- (53) a. (?) An average dachshund weighs 10.9kg.
b. (?) An average smoker smokes 12.5 cigarettes per day.

While I hold that these are *actually* still awkward in the way that those in (52) are, it is even easier to force an interpretation in these cases because there could be a dachshund out there that weighs precisely 10.9kg, and a smoker who always only smokes half of their 13th cigarette of the day. In this way, we’re able to “cast” these abstract averages to concrete ones, something that is more difficult with (hopefully) impossible properties like having 2.3 children²³.

Explicitly using adjectives like *average* or *neighbourhood* might help to alert the addressee as to the intended reading. Adjectives that highlight the “averageness” of the subject are likely more pragmatically compatible with *your* as well, to give a sense of closeness to the addressee’s situation. I suspect that IS-generic-*your* is interactional language (Wiltschko, 2021), serving to signal a desire for a certain degree of addressee engagement in comprehending the generic, almost like a type of confirmational particle. However, this phenomenon requires further study to get a full picture of the distribution of the data.

²²This shows up in other ill-formed IS generics. For instance, *#An elephant lives in Africa and Asia* (cf. *Elephants live in Africa and Asia*, Nickel (2009, 2016)) is infelicitous precisely because no kind member can live in two places simultaneously, meaning that the property cannot be felicitously exemplified by the sample, due to it being a singular form of representation. To put it in Nickel’s terms, samples cannot exemplify properties which express multiple ways of being normal simultaneously.

²³I informally asked several native English speakers how they felt about (i) *An average American has 2.3 children*, (ii) *The average American has 2.3 children*, and (iii) *The typical American has 2.3 children*. Responses were amazingly varied. Some felt that (i) and (ii) were completely equivalent (such speakers are likely able to cast from abstract to concrete averages more readily), while others felt that (ii) was far better and that (i) and (iii) were equally very degraded. However, all agreed that (ii) was the most natural, indicating

characteristic property, or an idealized property, or even just that the majority of rooms he's encountered being square is beside the point: employing a sample merely provides a means for him to encode this perspective, and to express it in such a way that his commitment to property homogeneity will be understood by other interlocutors).

In contrast, as has been noted by others in the literature, BPs simply point out that a loose pattern exists, making (55a) expressing something like “Rooms *can* be square” or “Rooms are *often* square” (e.g. imagine a context where individuals are asked to list square things). Since BPs do not employ samples, the generalizations permit greater exceptions since they do not demand the same degree of speaker commitment to the generalization. For one more example, consider (57).

(57) # A man is blond. (Greenberg, 2003, p. 50)

Once again, context can salvage the generic: imagine (57) uttered by a eugenicist or xenophobe, again with the prescriptive reading that “a man *ought to/should* be blond (in this country/and anything else is unnatural)”. The divide between what exists in reality (e.g. a variety of hair colours) and how the speaker conceptualizes kind integrity (e.g. having one specific hair colour) lend these utterances their prescriptive flavour (see Section 3.4.1.1 for further discussion), but a commitment to property homogeneity on the part of the speaker allows the IS generic to be felicitous.

This context sensitivity provides a clear advantage of samples over prototypes—presumably, a prototype comes pre-set with all the properties associated with the exemplar of a given kind. How then, could the same prototype be felicitous in one context, but not in another? It seems unattractive to suggest that the prototype can gain and lose properties based on context, since we would like our “encyclopedic” knowledge of kinds to perhaps be a bit more stable. Abstract samples, being tools of speaker intention, are far more flexible, and are thus far better candidates for instantiating “temporary” properties in this way.

However, we must still be able to account for why IS generics like (55b) and (57), even if they can be felicitous in an appropriate context, generally strike us as infelicitous. As has been touched on before, these properties are not homogeneous enough for the kind based on *our* default world knowledge. That is, because our knowledge of the

world informs us that there are many hair colours that a man can have, with none of them being relatively more striking than the other, having a MAN abstract sample that is specified for (as in, exemplifies) a single hair colour is not felicitous. Crucially, however, this view does not insist upon an individual having an explanation behind *why* that property is not homogeneous, unlike Greenberg's view:

...among all the properties we associate with being a man there is no property which we take to be a reasonable causer for having a certain specific and fixed hair color, or for any other property of the sort of "being blond."”(Greenberg, 2003, p. 104)

Not requiring a speaker to have an explanation (or, knowledge of a “reasonable causer”, as Greenberg puts it) in mind prevents us being forced to endow individuals with profound world knowledge. Furthermore, my view allows speakers to be completely incorrect about their judgements of generics. This is a virtue of the theory, because properties are erroneously judged as homogeneous, and misguidedly encoded in IS generics, all the time (this is particularly prevalent in stereotypical language, as in *A boy doesn't cry.*) Once again, shifting the judgement of characteristicness to the speaker, rather than the language community or the nature of reality, allows us the flexibility we need to accommodate this variability in judgement.

Amerlioration via modification

It has been pointed out in the literature that many IS generics which appear infelicitous when the subject term is unmodified ameliorate upon modification.

- (58) a. * A king is generous. (Cohen, 2001, p. 184 (3b))
b. A good king is generous. (Cohen, 2001, p. 201 (59))

There is nothing about IS generics in particular that requires the subject term to be modified (e.g. compare *A dog has four legs*). Instead, the basic idea I will forward is that kings (as a whole) are not homogeneous enough to form a “good sample” with respect to any non-definitional property (e.g. *A king rules a country* is perfectly acceptable, since

the property *ruling a country* is readily compatible with the abstract sample trivially exemplifying *being a king*). To put it simply, our world knowledge informs us that there is too much variability within members of king-kind (with respect to *being generous*) to produce a sample which is not misleading.

Upon modifying the subject term, we narrow the kind, and can thus felicitously craft a representative sample. Restricting the kind via an explicitly subjective metric, like *good* or *tasty* (e.g. *A (tasty) burger has pickled eggplant on it*) also helps to make overt the speaker perspective and bias that is baked in to any IS generic, facilitating the comprehension of the exemplified property that might seem bizarre if we didn't have a cue for the highly subjective nature of the generalization²⁴. In this way, (58b) means something more along the lines of "A good king is generous *in my opinion*."

We can accomplish this kind-narrowing not only through modification of the subject term, but also when further context is supplied through something like a *when-* or *if-*clause, as in (59).

(59) A king is generous when he is well-fed.

Despite the subject term of (59) not being explicitly modified, the "kind" of king has nonetheless been narrowed, allowing for the creation of a KING abstract sample which can more readily felicitously exemplify *being generous* (the 'when' likely also serves to create a connection between *being generous* and *being well-fed*, communicating that exemplifying the latter facilitates exemplification of the former). Exactly why this particular property can be exemplified by this particular abstract sample would again rest on complex computation associated with world knowledge (reasoning might proceed along the lines of: when not well-fed, an organism does not typically want to expend resources for other's benefit, so *being generous* would directly result from the king having enough for himself..., perhaps paralleling the causal account²⁵ from van Rooij

²⁴As Mari (2008) writes, "this entails that [IS generics] express a truth which is not based on induction, but depends on a different parameter, namely the judge" (p. 426).

²⁵Causal-based modification allows for the generation of implicatures that serve to command. For instance, imagine that a subject is being persecuted for a crime, and the king sitting in front of him utters (59) while rippling his many-ringed fingers towards a plate of grapes. The use of this IS generic therefore serves not only to express a generalization about well-fed kings, but is also embedded in a larger speech act that aims to bring

and Schulz, 2020). Again, however, exactly how this computation proceeds is an issue that is ultimately separate from the construction of the IS generic, and instead rests on how world knowledge is conceptualized.

3.5 Evaluation

As an interim summary, let us revisit (IS-SAMP), the conditions argued to hold for the use of IS generics.

- (IS-SAMP) An IS generic of the form *An F is G* uttered by speaker *S* and attended to by audience *A* is true relative to a context *C* iff
- (i) there is an *F* abstract sample which exemplifies *G*-ness, as enforced by *S*, which *S* has contributed to the discourse (unless an *F* abstract sample is already at issue), and
 - (ii) an *F* abstract sample exemplifying *G*-ness in *C* is deemed felicitous by one or more members of *S* or *A* (i.e. it is a “good sample” to at least one individual).

So far, I have discussed what abstract samples are (Section 3.3) and how they are constructed and used (Section 3.4), explicating condition (i) of (IS-SAMP). I now turn to tackling condition (ii)—how such sentences are evaluated.

3.5.1 The basics

Roughly, condition (ii) of (IS-SAMP) holds that an IS generic is true just in case the IS nominal denotes what I have so far been loosely calling a “good sample”, that is, a sample which exemplifies properties that seem reasonable and felicitous for the kind it is a sample of. Much like their construction, evaluation of samples, and thus IS generics, is relativized to individual perspective. In any discourse with more than one individual, there are multiple perspectives which can judge whether they believe the sample to be felicitous. This inter-participant variation is discussed in Section 3.5.3.

about action from the addressee, precisely because of the causality expressed by the generic.

As already mentioned, the contribution and evaluation of samples are not identical processes. When the speaker contributes a sample of kind X exemplifying property P to the discourse, they attempt to *enforce* that property P is indeed a felicitous property for the sample to exemplify. The speaker can therefore be conceptualized as the *enforcer*. In this sense, asserting an IS generic has illocutionary force akin to persuading or convincing (e.g. Searle, 1969) in that it attempts to replicate the enforcer's conceptualization of a kind's representative property(s) in the listener's mind. When an enforcer contributes their (massively underspecified) abstract sample to the discourse, the listener (or, *evaluator*) must then compare this abstract sample to their more extensive world knowledge in order to arrive at the perceived truth of the generic. That is, evaluating an IS generic for truth requires a much richer representation of a kind than the abstract sample itself affords.

Consider *A dachshund has a long body*. When uttered by the speaker S , S contributes an abstract DACHSHUND sample to the discourse, instantiating and exemplifying only the properties *having a long body* and *being a dachshund*. At this point, the listener L must draw on their knowledge of dachshunds to see whether or not they think the generic is true. A wide variety of factors could contribute to a generic being perceived as such: maybe it is evaluated via a complex computation in L 's "theory-based" conceptualization of kinds as Cimpian et al. (2010) suggest, or perhaps L has never seen a short-bodied dachshund, and therefore employs a more frequentist or statistical approach to judging the statement as true, or maybe L has never seen a dachshund in reality, but has read a book about regulations for dachshund breed standards, and so instead relies on societal rules. Maybe L doesn't even know what a dachshund is, but due to trusting S , they accept the IS generic and update their knowledge bank. Very likely the method of evaluation will be different depending on the properties and kinds in question (cf. Leslie, 2008), the main point being that evaluation of a sample does not proceed in isolation.

3.5.2 Role of world knowledge

In practically every theory of IS generics, the idea of world knowledge or language community is appealed to in order to explain how judgements for IS generics are

regulated (e.g. “This logical form is satisfied just in case the [rule] is in effect, i.e. *accepted by the language community*” (Cohen, 2001, p. 199, emphasis mine); “. . . those conversational background which yield sets of propositions which are usually known, commanded, stereotyped etc. *by the whole community of language users.*” (Greenberg, 2003, ft. 6, p. 80, emphasis mine)). I have argued that world knowledge profoundly impacts our perception of IS generic truth (after all, IS generics are simply a way to communicate our knowledge about the world), but that evaluation should not be seen as resting on any kind of broader speaker community. Instead, evaluation is relativized to *the world knowledge of individuals*, and broader acceptance of a particular generic is simply due to converging perspectives.

But what about when world knowledge is lacking? For instance, consider the following IS generics, which many individuals will lack the knowledge to evaluate based on the fact that they concern specialized areas of interest.

- (60) a. A white-faced saki has large canine teeth to crack nuts.
b. A creature with haste ignores summoning sickness.

While a listener without interests in primatology or Magic the Gathering might not be able to determine whether the sentences in (60) are true or false, this uninterpretability would not necessarily strike the listener as *false*—instead, it would likely cause them to update their world knowledge, such that they “store” the exemplified property as characteristic. However, this readiness to accommodate the speaker’s sample might not be present in cases where we know the speaker to be untrustworthy, or where they are clearly joking, etc; the speaker would have to be perceived as cooperative. This process of accommodation is somewhat similar to Greenberg’s (2003) notion that, when a listener is ignorant of the “real” in-virtue-of property that makes an IS generic true, “he will accommodate another “in virtue of” property which will make the sentence true.” [ft. 9, p. 83]. However, my sample-based theory crucially differs in that speakers need not invent explanations as to *why* that sample should have the particular property it purportedly exemplifies (while generating possible explanations might indeed play a role in someone evaluating how likely a given generic is to be true, I argue that such a process is certainly not *necessary*). For some listeners, simply trusting speaker authority

might be enough to cause them to update their world knowledge. Furthermore, since we don't need to worry about determining whether a given rule is "in effect" (Cohen, 2001), a generic that serves to inform will not automatically be rendered false or infelicitous.

Generics are one of our primary linguistic devices for informing others about the world (or at least our particular take on it). Samples provide a mechanism both for evaluating known generalizations, as well as acquiring new ones, making a sample-based account more flexible in capturing discourse dynamics than existing theories which rely on broader (i.e. external to an individual) modes of evaluation.

3.5.3 Variation in truth value

As has been oft noted in the literature, generics are a class of sentence which are subject to varied truth values between individuals. Stereotypes surrounding social groups are a particularly rich source of such contentious generics; for instance *A boy doesn't cry* may be perceived as true by some, but out-dated and false by others.

As has been mentioned before, since each individual likely varies wildly in the extent and "accuracy" of their world knowledge, the truth evaluation of IS generics is highly dependent on how a given individual conceptualizes the kind and property that is the concern of the IS generic. Indeed, since world knowledge is not even fixed for an individual speaker, a given generic might change in truth value for a speaker over time. For instance, imagine a child excitedly coming home from school announcing, *I thought an eggplant was a vegetable, but an eggplant is a berry!* To put this another way, at time t_1 this child would have said the sentence *An eggplant is a vegetable* was true, but after botanical enlightenment at time t_2 , they would have deemed it false. At this time, they would instead judge *An eggplant is a berry* to be true. Unsurprisingly, because the child's world knowledge changed, their truth evaluation for these generics changed as well. Because samples are crafted and evaluated within a single discourse (and do not persist outside of it), we can capture this shift in an individual's knowledge of a kind. Furthermore, since samples are an account of what an IS nominal in an IS generic *picks out*, and not the *type* of generalization it can assert, samples, as opposed to definitions or rules held by the speaker community, can more closely capture the way that a particular

“portrayal” of a kind that can be evaluated differently by different individuals (or even different stages of an individual).

A salient worry is that a sample-based theory falls prey to massive overgeneration; after all, what is stopping someone from contributing a MAN abstract sample, exemplifying the property *being blond*, to a discourse for the reportedly infelicitous #*A man is blond*? In short, nothing. However, as discussed in Section 3.4.2.7, while there are certainly some IS generics which seem odd “out of the blue” (to use Greenberg’s description), I argue that it is difficult for my sample-based theory to overgenerate since practically any IS generic can be perfectly felicitous given appropriate context (and appropriate point of view). Quite simply, some infelicitous IS generics don’t tell us anything especially compelling about IS generics *themselves*, and instead are reflective of how one conceptualizes kinds, with those which seem to *require* context to be felicitous merely being those that do not instantly align with an individual’s default world knowledge.

3.5.4 Property homogeneity

I have been appealing to a rather intuitive sense of “homogeneity” thus far, and so the notion requires further explication. Property homogeneity within a kind is very similar to the notion of whether or not a property “runs in a kind” (Krifka, 2013, p. 385) or is a “good possibility” (Greenberg, 2003), however, previous theories which appeal to such notions make it seem as if there are absolute rules concerning how properties appear in kinds (i.e. that *barking* “runs in a kind” with respect to dogs in some absolute way, external to speaker perspective). Instead, I argue that the perception of property homogeneity within a kind is based on individual speaker perspective, and that depending on speaker intent, a property can be coerced to be more or less homogeneous than it might be in terms of statistics, etc. Therefore, this has aspects of Cohen’s (1999) *homogeneous reference classes* view in which different speakers may carve up a kind into different reference classes based on their view of the world.

As discussed in Section 3.4.1, the perceived felicity of a given sample can be likened to how one judges false advertising. That is, if we take an advertised entity

to not be *reflective* of the instance of the product you would purchase (in that, the advertised property in the sample is not instantiated homogeneously among instances of the product), the advertising seems misleading. Similarly, if someone contributes an abstract sample of a kind to a discourse that exemplifies a property the evaluator does not take to be reflective of the kind, it would be deemed infelicitous or false. Part of this felicity hinges on our expectation that the instance of the entity we encounter (whether of a kind or a product) will instantiate the property exemplified by the sample. For kind members we encounter much more frequently, there is likely more wiggle room for how closely we expect any given member to adhere to the sample (that is, once more kind members have been encountered, we can develop a richer representation of what would count as “normal”). For instance, *A dog has four legs* is taken to be true even in the face of non-quadruped dogs simply because most people have such a rich representation of the kind DOG for categorizing members. Compare this to a statement like *A rock hyrax has sharp, fang-like teeth*. If you had never encountered a rock hyrax, and then were presented with one that had happened to lose its teeth in battle, you might be tempted to judge the generic as false, or to not classify the creature as a rock hyrax (depending on how much you trusted the speaker, etc.) because your one rock-hyrax-categorization-metric is missing. That is, your ability to judge what is and isn't a felicitous property to exemplify for that kind will be underdeveloped if your exposure to the kind is impoverished. Additional factors, like the relative danger or uniqueness of an exemplified property (following Leslie, 2008) could also make us attend to perceived homogeneity differently (that is, a particularly dangerous property could result in “forced homogeneity”, wherein we treat every encountered kind member *as if* they instantiated the property, as in *A tick carries Lyme disease*). Furthermore, we attend to homogeneity more finely in kinds we “care” more about, which is why people typically bristle at unfavourable generalizations regarding demographics of people/social groups.

Several mechanisms have been proposed to capture the way that speakers will homogenize a property in generics: for instance, McKeever and Sterken (2021) introduce the idea of *Amplification* for when an individual will deem a generic true despite very weak evidence (for instance, someone who is a victim of a vicious poodle-biting attack

might start saying that *Poodles are dangerous*). In this sense, Amplification allows even a very minor property to be elevated to a homogeneous status. Essentialising, or the process of inferring that a property is somehow tied to the essence of kind members (e.g. Bosse, 2021b; Leslie, 2014; Rhodes et al., 2012) similarly serves to make the manifestation of the property seem homogeneous, even if it actually isn't. Recall that this is echoed in the fact that speaker interests can determine explanatory strategies of normality (Nickel, 2016), or reference class partitioning (Cohen, 1999). I highlight these mechanisms precisely because they have to do with speaker *perception* of property homogeneity, rather than any reliance on an absolute reality of kinds and their "typical" properties. Just as Textor (2008) argues that samples *themselves* aren't responsible for property exemplification, I believe we also can't see the motive and mechanism for drawing generalizations independently of an Agent's perception of reality.

In this sense, basically all previous accounts of genericity are correct: some generalizations are based on probabilities (e.g. Cohen, 1999), others are based on how striking or distinctive a property is (e.g. Leslie, 2008), still others are based on rules (Carlson, 1995), whether those be linguistic/definitional (Krifka, 2013) or otherwise (Cohen, 2001), while others will be deduced based on perceived causation (e.g. Greenberg, 2003; van Rooij and Schulz, 2020) or on judgements of what is "normal" (Nickel, 2016)²⁶. For this reason, the actual *means* of arriving at a particular partitioning of a kind likely need not be the responsibility of a theory of IS generics or BP generics; under my account, no matter how the generalization is reached, abstract samples provide a clear mechanism for communicating a particular conceptualization of a generalization about a kind.

²⁶Furthermore, *how* speakers have gained knowledge about the kind could impact the strategy they use. For instance, Gelman and Bloom (2007) found that adult participants distinguished "inborn" from "acquired" properties for the imaginary kind "dobles", such that they were more likely to state that *dobles have claws* if they were informed that dobles were born with claws, rather than just put them on. This use of an intrinsic property for generalizing stems from the fact that they were informed about it; if they had purely visual cues, it could be they would default to a more probabilistic approach. It is very possible that there is a hierarchy of generalizing mechanisms, dependent on how rich knowledge about the kind is.

Chapter 4

Further Applications

4.1 Negative IS generics

Generic sentences may also make claims about the *absence* of a particular property, as in (61).

- (61) a. A dachshund does not have two tails.
- b. A pug can't breathe properly.

There is nothing stopping a sample from exemplifying a negative property, so this poses no challenge for the theory. We find negative property exemplification even in physical samples; for instance, imagine you are looking at a paint swatch that is supposed to protect metal from rust. This sample might be described with a statement like *This paint does not rust* (such that a negative property is being attributed) or also *This paint is rust-resistant* (such that a positive property is attributed). That is, whether or not a property is “negative” or “positive” is a consequence of how a particular language has evolved terms for the concept, and should therefore not have bearing on the metaphysics of property instantiation and exemplification.

4.2 Generics with object ISs

So far only generic sentences with a subject IS have been discussed. However, there also appear to be sentences that have a generic reading when an IS is in object position¹. Examples are shown in (62).

- (62) a. John loves a dangerous challenge.
b. Mary hates a messy room. (Cohen, 2001, p. 190 (25))

Such constructions are variable in their acceptability, and are typically improved with some kind of modification, as in (63) (for another example, also contrast (62b) with *#Mary hates a room*). This is not always the case, however: consider the perfectly felicitous sentences given in (64) whose IS objects are unmodified.

- (63) a. [Said of a 'classic breakfast' menu item]
I am always tempted by a ?(classic) breakfast.
b. John likes a drink ?(after work).
(64) a. He doesn't like a mess. (Archive 81, S1E2 "Wellspring")
b. John loves a challenge.
c. I love me² a calzone. (*Parks and Recreation*, S4E10 "Citizen Knope")

¹Indefinite singulars can also arise in adjuncts. For instance:

- a. ...I sure love the taste [of [a good burger]] (Jules Winnfield, *Pulp Fiction*)
b. Steamed hams are key [to [an unforgettable luncheon]] (in Albany)

Like object ISs being constrained by properties of the verb (in virtue of being contained within a predicate), adjunct ISs would similarly be constrained by the adjunct they are situated in. It seems to me that adjunct ISs are relatively unconstrained, but I leave it to future work to see if there are any patterns unique to adjunct ISs which bear explanation.

²IS objects are also present in the personal dative construction, which is present in some dialects of English, like Appalachian English (e.g. Wolfram and Christian, 1976). Interestingly, the personal dative seems to permit a generic interpretation of IS objects that are strongly biased towards an existential interpretation otherwise (e.g. compare *I love a dachshund*, which is more strongly existential, with *I love me a dachshund*, which is strongly generic). This claim would, of course, require further study with speakers who actually possess the dialect, rather than the pseudo-dialect that Standard North American English speakers have superficial knowledge of (comparing these two versions of the dialect would also be interesting). The personal dative does

Cohen (2001) argues that, despite their *prima facie* generic flavour, sentences with object ISs are not generic, and instead have existential *de dicto* readings. In contrast, Vogeleeer (2012) argues that IS objects in quantificational habituals are generic^{3,4}, as opposed to merely nonspecific, citing middles as an example (65).

(65) a. Mary reads a poem loudly⁵ (Vogeleeer, 2012, (19c))

not automatically lend a generic interpretation to the sentence, however; when in the past tense, constructions such as *I shot me a pheasant* (Wolfram and Christian, 1976, p. 130 (109a)) are strongly existential. This makes sense, since delimiting the event by situating it in the past means that the IS picks out a singular, nonspecific (rather than “generic”) referent “contained” in that event. Note that non-present-situated ISs are only temporally “cut off” from a generic reading in cases of non-habitual statements (e.g. *Jules ate a burger*); generic interpretations are licensed when behaviour over larger time intervals are being discussed (e.g. *Jules loved a tasty burger*; *Most days, Jules ate a Big Kahuna burger after work.*). See Section 4.3 for further discussion of tensed IS generics.

³While typically one talks of readings of *sentences* being generic, a few authors discuss the interpretation of subjects/objects as being generic. While I subscribe to the former characterization, I have attempted to preserve the author’s view when discussing other theories.

⁴Zaroukian and Beller (2012) also argue that object IS sentences can have generic readings, but that this is only possible through modification (e.g. an adjective like *good* or temporal prepositional phrase like *after dinner*). Such modification is argued to provide a restrictor that licenses a generic interpretation, as demonstrated by the underlying forms below:

- a. *John likes a cookie after dinner.*
 $GEN_s [J \text{ in } s \text{ and } s \text{ after dinner}] \exists x[\text{cookie}(x) \text{ and } J \text{ likes}(\text{have}(x, J) \text{ in } s)]$ (Zaroukian and Beller, 2012, (21))
- b. *John likes a good cookie.*
 $GEN_s [J \text{ in } s \text{ and } s \text{ is a cookie-HAVING situation and } s \text{ exceeds a threshold for goodness}] [J \text{ likes } s]$ (Zaroukian and Beller, 2012, (28))

The argument for modification licensing *GEN* stems from the contrast between something like *#John likes a cookie* (where the generic interpretation is hard to get) and *John likes a good cookie* (which is more strongly generic). However, requiring modification for *GEN* makes it difficult for their theory to account for cases with unmodified IS objects, like (64).

⁵Anecdotally, several informally surveyed native English speakers find this construction degraded, with the source of the degradation seemingly stemming from the use of an indefinite singular. Some felt it improved with context, however (e.g. *Nobody wants Mary to come to the poetry slam, because she sure reads a poem loudly*). Interestingly, the people I surveyed said that this contextual framing was much better when the target sentence included *sure*, aligning with the observation that uses of IS objects often seem to be accompanied by other markers of emphatic language, see Section 4.2.3 for further discussion). Empirical study should target

- b. $\lambda P.\lambda s.\lambda x. \text{GEN}_{x,s} [\text{poem}(x) \ \& \ \text{read}(M,x,s)]$
 → [loudly (read (M,x) in s)] (Vogeleer, 2012, (20b))

Lawler was the first to point out that objects in generic sentences can have different quantificational interpretations. Consider the sentences in (66).

- (66) a. Harry loves toads.
 b. Harry catches toads. (after Lawler (1973b, (38)))

According to Lawler, while the BP object in (66a) refers to *all* toads, the BP in (66b) only refers to *some* toads. Note however that this “all” is not strict universal quantification, and like other generics permits exceptions (e.g. *Harry loves toads, but he hates Whiskey the Great Plains toad; they’ve been caught in a blood feud for decades*). Declerck (1987) coined the terms (*object*) *inclusive* reading for the first (in that the object refers to all entities in the relevant set, here toad-kind) and (*object*) *non-inclusive* for the second. As further support of this distinction, Laca (1990) draws on evidence from Spanish to distinguish inclusive from non-inclusive interpretations of objects, stating that bare NPs correspond to the non-inclusive reading while definite NPs correspond to the inclusive reading, as shown below.

- (67) a. Mi perro odia a los gatos.
 b. # Mi perro odia gatos. (Laca, 1990, p. 31 (17a), (17a’))
 ‘My dog hates cats.’
- (68) a. Henry fuma puros.
 b. # Henry fuma los puros. (Laca, 1990, p. 31 (17c), (17c’))
 ‘Henry smokes cigars.’

Now, IS objects obviously don’t refer to sets like BPs, so we can’t get the same inclusive vs non-inclusive quantification we observe with BPs. However, object ISs can also receive existential and more “non-specific” interpretations, so the fact that a similar contrast exists means that so-called “generic objects” (as Laca (1990) calls them) might such sentences in order to see whether or not they really can be taken as evidence that IS object sentences can have generic readings.

not be limited solely to BPs. So, it seems we have at least some reason to not side with Cohen and instead believe that sentences with IS objects really can have generic readings. If we follow this line of reasoning, it would seem that, like IS subjects, IS objects should denote samples.

How does a sample-based account fare with IS objects? Without further refinement, it seems to overgenerate. After all, in something like *#Mary likes a dachshund* (which seems strongly existential, and whose generic reading is far less accessible than that of something like the BP generic *Mary likes dachshunds*) it seems that we should be able to contribute a DACHSHUND sample to the discourse just like any other case discussed thus far. However, as I will demonstrate, a number of factors contribute to many of these sentences being marked or degraded, most of which are peripheral to the mechanics of samples.

4.2.1 The verb matters

To start, let's take a look at some more contrasts. Observe how the particular verb biases us towards a more (69) or less (70) habitual reading, and that the less habitual the reading, the more accessible the generic interpretation of the IS object. This was noted by Declerck (1987), who argued that the object NP must be interpreted within the VP, and that as a result, the particular verb will, in addition to pragmatic factors, determine the set of referents. However, since IS objects are singular rather than plural, the pragmatic factors impacting existential vs "generic" interpretation of the object will be different.

- (69) a. # Jules eats a burger.
- b. # Henry watches an Arthouse film.
- (70) a. [It's been two years since her hermit crab died, and Mary is still inconsolable.] Mary needs a man (in her life).
- b. Mary wants a man (but can't find one).

While *wanting* and *needing* something are certainly things that an individual can do for extended periods of time, they also can be true given a singular event. For instance,

Mary wants a man can be true even if, up until the time of the utterance when she suddenly decided she wanted a man, Mary had never had any desire for a male in her life. Contrast this with *Jules eats a burger*, which, to get a generic interpretation (so that it has a meaning like *Jules eats burgers*) rests on *also* getting a habitual reading. After all, Jules cannot be said to eat burgers habitually after precisely one burger-consuming incident. When evaluating an IS generic with an IS in object position, we are therefore evaluating the predicate as a whole, so that the sample is essentially “contained” in the predicate. This is perhaps unsurprising, considering that the interpretation of an object is known to depend on the verb (e.g. Marantz, 1981). However, it is not that, for instance, the verb *eat* or other non-intensional verbs can never be used in a sentence with a generic interpretation (i.e. one could imagine a theory that only some verbs can take sample-denoting complements): compare similar felicitous IS generics like *A white-faced saki eats unripe fruit*.

Instead, I argue that the use of an IS object in a habitual leads to a baseline number incompatibility. This means that such samples are not licensed not because of anything to do with samples specifically, but because of how they interact with the event quantification required for habituals. Further data, using an IS subject (rather than the specific individual subject typically found in the literature), is provided in (71).

- (71) a. ? A mechanic repairs a car.
 b. ? A dog chases a car.
 c. ? An American eats a burger.

While these are all acceptable IS generics in somewhat odd contexts (for instance, consider (71a) in a context where multiple professions are being compared, and the propensity for car-repair is at issue), they are undeniably far worse than the corresponding statements with a BP object (*A mechanic repairs cars*, *A dog chases cars* and *An American eats burgers*). This awkwardness is likely due to a habitual being superimposed on the IS generic—that is, statements like those in (71) express habitual behaviour of the IS subject. Therefore, they are susceptible to the exact same blocking of multiplication readings that any other object IS habitual is (Hofherr, 2013), e.g. *John repairs bicycles* vs *#John repairs a bicycle*. Since a habitual quantifies over events, the

use of an IS object seems to isolate a single event, resulting in a number incompatibility between the single event implied by the use of the object IS, and the multiple events that are necessary to form a habitual⁶. Object ISs in habituais are licensed, however, when the object is clearly “parcelled” within the events that are being quantified over.

- (72) a. # Harry smokes a cigarette. (*cf. Harry smokes cigarettes*)
b. Harry smokes a cigarette after dinner/with his coffee/
on his drive to work.

According to the literature, in examples like (72a) only an existential interpretation is available, not a generic one. A generic reading is said to become available, however, when there is some kind of modification (72b), like the prepositional phrase *after dinner* (*cf. Zaroukian and Beller, 2012*). However, note that when the event is situated in the past, the equivalent of (72b) is very strongly existential if there is no overt indication (*e.g. before quitting*) that it is to be interpreted as a past habitual, indicating the generic interpretation is not licensed by the PP modification alone.

- (73) #(Before quitting), Harry smoked a cigarette on his drive to work.

Instead, I argue that generic readings involving object ISs only become licensed within habituais when the IS object is “parcelled”⁷ within the events being quantified over. This parcelling can be accomplished through modification like we’ve observed (*e.g. once we’re quantifying over “after dinner” events in each of which precisely one cigarette is smoked*), but the crucial point is that the *type* of modification generating the restrictor matters, in that it must induce this parcelling (in this sense, the modification must individuate the event in such a way as to *motivate* the use of an IS object). Parcelling

⁶When expressing a more “essence”-based habitual an IS object is licensed, *e.g. An anarchist hates a capitalist*. Since we don’t need to quantify over multiple hating-capitalists events and instead rely on knowledge of a more essential, almost definitional hatred, we don’t have the same number incompatibility. Accessing habituais that target “essences” seem to be far easier with “created kinds”, see discussion around (74) for further explanation.

⁷This parcelling can also occur with IS subjects, as in *...every time a rug is micturated upon in this fair city, I have to compensate [the owner]* (Lebowski, *The Big Lebowski*). Here *every time* quantifies over multiple events, with *a rug* being parcelled within each of those.

sometimes necessitates the use of an IS object—for instance, compare *Harry smokes a cigarette after dinner* with the misleading *Harry smokes cigarettes after dinner* (supposing he only ever smokes a maximum of one). Because we are now dealing with ‘after dinner’ events, and not existence-in-general, the use of a sample denoted by the IS object, parcelled within the ‘after dinner’ events, is now the only form that is licensed.

However, samples are playing a comparatively uninteresting role in such constructions, exemplifying only being a member of their own kind. Instead, the contrasts stem from intricacies with habituals, and do not pose any worries for a sample-based account of IS generics.

4.2.2 IS object modification and kind homogeneity

Let us now turn not to modification of the event, but to modification of the IS object itself, specifically in sentences with verbs of personal taste (as in *Jules likes a ?(tasty) burger*). As discussed earlier, modified IS objects are typically deemed more felicitous, but modification is not necessary. One possible explanation is that, just as with sentences like *#A king is generous*, whose perceived oddity was argued to stem from the identified kind being too broad and non-homogeneous to form a “good sample” exemplifying the ascribed property (see Section 3.4.2.7), IS objects can also suffer from non-homogeneity. Consider the contrast between *John hates kids*, which is clearly generic, and *John hates a kid*, which is more strongly existential. Presumably this would be because the kind KID is too broad to form a good sample. However, introducing some kind of modification (e.g. *John hates a loud kid*) improves it, since it narrows the kind to a more homogeneous set. Often such generics seem to be facilitated if there is some *motive* for why the subject feels the way they do (as captured by the verb) towards the thing denoted by the IS object. For instance, specifying a *loud* kid gives clear reason for John’s hatred. In contrast, “kids” as a whole seem like too broad a kind to hate with the quasi-universal quantificational force carried by IS objects.

When the kind *is* inherently more homogeneous, however, no such modification of the IS object is necessary. For example, observe the contrast between IS objects denoting kinds that are purely cultural constructs (what I’ll call “created” kinds), which

more readily permit a generic reading, vs more “physical” or “natural” kinds, which seem more strongly existential:

- (74) a. Mary loves a bachelor / fireman. (cf. # Mary loves a man)
b. Patrick hates a capitalist.

Presumably, created kinds are more “consistent” in their membership: since membership is typically defined by a singular rule (e.g. *being an unmarried male* is the only relevant property for a member of the kind BACHELOR) and additional variation within the kind is ignored or less salient precisely because the kind is *built* around that rule, such kinds are inherently more homogeneous than “physical” kinds. Think of it this way: dogs are naturally occurring things with tremendous variation, but they happen to form a particular species. Our creation of “dog-kind” hinges on our wanting to identify something in the physical world. In contrast, bachelors are things we created, and we created them to express a particular social status rather than capture any physical facts, independent of human existence, about the world. This means that the *created conception of the kind* is free to be totally homogeneous, even if its kind members might not be. To put it simply, with created kinds, the concept comes first, whereas with physical kinds, members come first and a label is developed to identify them. Returning to (74), we can understand the felicity of these sentences as stemming from Mary loving the *marital status* of a bachelor, and Patrick hating the *beliefs* held by a capitalist. These target the purely human-created dimensions of the kind, rather than any incidental properties that all members happen to share (e.g. Patrick hates capitalists for their ideology, not for all of them wearing top hats, or owning fancy watches, etc.). Additionally, the central rule(s) defining a created kind provide a motive for why the subject might feel a certain way about that kind.

Furthermore, more “unusual” or “exotic” kinds also seem to form more felicitous samples without modification: consider the contrast between *Ben loves a calzone* vs *#Ben loves a sandwich*. Perhaps this is because we have typically encountered fewer tokens of members of more unusual kinds, making them more likely to be perceived as homogeneous in terms of their members’ properties, and, as a result are able to

more readily produce a “good sample”^{8,9}. Taken together, this indicates that it is not modification alone which licenses a generic interpretation (and thus a felicitous sample); instead, it is based on our perception of homogeneity within the kind for the property that is at issue.

4.2.3 Humorous effect

There is a playfulness to many IS object constructions, especially when used to express personal taste (e.g. *Ron loves a steak*). They have an emphatic quality, highlighting *just how much* that predicate holds so as to communicate a particular enthusiasm or disgust on the part of the subject. I suggest that perhaps this humorous quality comes from flaunting the assumed default to a BP object to express habitual or habitual-like statements. For instance, consider Libby, a baby who consumes bananas with evident zeal. One could utter the IS object construction *Libby loves a banana* to characterize this, but while acceptable, there is something somewhat “stylized” about this. Such

⁸A seeming counterexample that might spring to mind are utterances with the IS object *a beer*, which is obviously an extremely prevalent and broad kind, like a sandwich:

- a. I'd love/I could sure go for a beer.

However, I argue that such sentences are not actually generic *per se*, and that *a beer* is simply nonspecific (here I think we also have *a beer* “standing in” for the event of having a beer, perhaps via meaning transfer, allowing *a beer* to stand for consuming any number of beers). To see this, consider cases like the ones we've been previously considering, where *a beer* appears in object position in clearly more generic uses; as expected, these are degraded without kind narrowing via modification of the object IS.

- b. John loves a ?(dark) beer.
- c. Does anyone know where to find gluten free beer? I miss a ?(good) beer.

⁹Brand names are another interesting case since they are conceptually very narrow and homogeneous in their membership (since they are a particular product manufactured to a specified standard). However, even they seem to improve with some modification when the subject is a specific individual. Again, this is likely because the modification provides some justification for the liking/hating that might not be as obvious as when the subject identifies a particular kind that would be predisposed to certain feelings toward the IS object (e.g. *Punks love/a punk loves a PBR* vs *Harry loves a (cold) PBR* or *Kids love a McChicken* vs *Ronald loves a (good) McChicken*). Sentence-rating tasks should be conducted for such sentences to gather more speaker judgements.

statements seem to emphasize that the subject individual feels so strongly about the kind expressed by the IS object that they will love/hate, etc. *any* arbitrary instance of the kind; for this reason, *Libby loves a banana* feels much stronger (that is, seems to suggest a stronger love for bananas) than *Libby loves bananas*. Consider other cases of IS objects; in every case the IS object feels more playful and also more emphatic than the BP equivalent.

- (75) a. I love a silver shoe¹⁰ (cf. I love silver shoes)
b. I love a spicy burger (cf. I love spicy burgers)
c. I love a Victorian aesthetic (cf. ? I love Victorian aesthetics¹¹)

What these IS object constructions express is habitual in spirit; after all, we need to quantify over many happy-banana-consuming events in order for *Libby loves a banana* to be true. However, as discussed earlier, object ISs typically block a multiplicative reading (cf. cases like *John repairs a bicycle*), meaning that employing an object IS to express such a sentiment is not the “preferred” means of doing so. We can assume that there is some kind of default to using BP objects for habitual statements, and when a speaker uses a non-BP object in a habitual (such as an IS), this default can be flouted for comedic and/or emphatic effect. Under a Gricean account, this could be seen as flouting the maxim of Manner; one is not being perspicuous (to use Grice’s wording) if they use an IS rather than a BP object for a habitual statement since using a BP object does not

¹⁰These IS object generics are attested “in the wild”, as anecdotal evidence from Twitter indicates:

- (1) a. **I love a silver shoe!** These worn and loved silver brocade dancing shoes, dated 1920-29, are from the HCC Fashion Archive, Houston (@glassbuttons, July 31 2020)
b. Sounds fire I might just have to go back for some grub this weekend **I love a spicy burger** (@tmathewsdrummer, September 9 2021)
c. I wish preppy southern clothes would come back in style. **I love an old money aesthetic.** (@Tori_Ann76, March 7 2023)

¹¹Note that while the IS object is sometimes awkward in habitual cases, there are other instances, with typically singular nouns, that are awkward in the BP. For instance, since *aesthetic* is usually singular, the BP object version is marginal. This highlights how the conventionalized plurality/singularity that a kind-referring term usually surfaces with provides another pressure on how different generics are distributed, one that is separate from the metaphysics of kinds.

present a conflict between an existential and habitual reading, and automatically implies a plurality of events (which is needed to quantify over for a habitual).

Other affected language also often comes into play when IS objects are used; for instance, emphatic (often unconjugated) “do” (e.g. “*I do love a locker room. Smells like potential...*”, *Ted Lasso* S01E01), personal datives (used by speakers of dialects which do not necessarily contain them), the “we love a” construction (presumably related to “we/you love to see it”-type constructions¹²), and the rhetorical “you gotta love”/“who doesn’t love a” constructions, whose nonspecific reference likely facilitates the generic reading. Anecdotal data from Twitter is given below to illustrate each of these devices, with the relevant statements bolded. Note again that adjectives modifying the IS object are far from required to license a generic interpretation, as the literature has sometimes suggested.

¹²*We love to see it* and *You love to see it* have become common catchphrases. For instance,

a. Hot Cheeto Puffs ranked highest for heat and taste. You love to see it. (@jesus_jimz, July 2 2019)

(76) *Emphatic 'do'*

- a. The 'Movies' channel on antenna TV is gonna have a 'Thin Man' marathon all day. I know what I'm gonna be doing.... Also - Asta the dog is outstanding. **I do love a terrier.** (@thosewackybones, January 1 2021)
- b. Printing retro inspired flower cards this afternoon - **I do love a gradient**, especially if it's pink and orange! #shopindie #handmade (@franwooddesign, March 11 2023)
- c. **He** [a cat] **do love a belly rub** (@sugarcomatosed, March 14 2023)
- d. It has to be said, **we do love a good cathedral...** and most of them are named after the man himself, St Patrick! (Tourism Ireland @GoToIrelandCA, March 7 2023)

(77) *Personal dative*

- a. Five guys. **I love me a burger** but I CANNOT and SHALL NOT justify spending 10 quid on one (@Evvzwith, December 5 2022)
- b. Pretty pi appreciation tweet. Pies really aren't my thing but **I do love me a swiss meringue topping** (@Liselle, March 14 2023)
- c. the family business!!! **love me a good Stamps Burger** from my people (@Stamp5Elizabeth, March 13 2023)
- d. [Accompanied by a picture of Mads Mikkelsen] **LOVE ME A GOOD SOCIALIST BOY** (@_wrubel, March 5 2023)

(78) *'We love a' construction*

- a. #crufts #donnie **we love a terrier!** (@chellingsen, March 31 2022)
- b. **We do love a spooky Sunday picture!** Alex caught this ghostly figure in an open doorway at Guys Cliffe... (@DazsGhostHunt, March 12 2023)
- c. **we love a hairstyle reference** in scream vi (@slasherbaddies, March 13 2023)
- d. **We love a good cake smash** Happy 1st birthday baby girl! (@Sanza.eth, March 12 2023)

(79) *'(You('ve) gotta love' construction*

- a. **You've got to love a terrier beech shadow!** (@Jimgunnee, September 26 2022)
- b. **Gotta love a beagle baby** (@FooforDave, March 12 2023)
- c. **You gotta love a DC recycling bin**, glistening in the rain (@CharDreizen, March 6 2023)
- d. Good Morning and Happy Saturday! **You gotta love a dark Pokémon story** like Sneasel (@Rheaquaza, March 11 2023)

Presumably, all of these more “stylized” speech mechanisms serve as additional cues to indicate that the speaker is flouting the default-to-BP, serving to emphasize how much the speaker is committed to the generalization they express, so much so that it holds for any arbitrary instance. The use of IS objects in “humorous” generics is a fascinating means of employing the general markedness of a particular construction (the IS generic, which is less of a default than the BP generic) for pragmatic effect. Further study should be directed towards seeing if such humorous generics exist in other languages, particularly those that might lack an IS generic construction.

4.3 Tensed generics

Consider the following statement regarding the temporal nature of generics:

A property of characterizing sentences which has often been regarded as essential to their generic meaning is temporal unboundedness, namely the property by which such a sentence is not true relative to a time interval with definite bounds, but rather relative to an indefinitely large interval, or even in a timeless way.

(Mari et al., 2013, p. 41-42)

Mari et al. (2013) are careful to note that there is a specific subtype of generics involving *reference to a kind* which can be temporally bounded, as in (80).

(80) a. Potatoes were imported to Europe at the end of the XVI century.

b. The dodo became extinct in the late XVII century.

(Mari et al., 2013, p. 42 (95), (96))

However, how are we to account for statements like those in (81) which are clearly IS generics, but temporally bounded by time intervals excluding the present?

(81) a. A boy didn't cry in my day.

b. A dachshund will have two tails in 2042.

c. A yellow carnation used to be a symbol for disdain.

It has been argued extensively that IS generics are not kind-referring, meaning the argument that they are *reference to a kind* generics, which supposedly permit temporally bounded reference, falls flat.

A sample-based theory can easily account for tensed IS generics. After all, a sample need not be of the present moment—an abstract sample can be “time-stamped” for any time interval the speaker wishes (in this sense, they collapse one of Cohen’s 1999 histories or Nickel’s 2009 time intervals into a representative instance). The speaker can either overtly supply the time-frame that the sample is supposed to be “drawn from” (e.g. *in my day*, *150 million years ago*, etc.) or leave it to context (e.g. *A: Grandpa! Tell me about what it was like when you were little! B: Well, one thing’s for certain, a boy didn’t cry...*).

To take an example, let’s consider the utterance of (82), perhaps from a father chastising his son for wearing jeans to the office.

(82) When I was a boy, a man wore a suit to work.

As with any other IS generic, the speaker (here, the father) contributes a MAN sample to the discourse, exemplifying the property of *wearing a suit to work*. Crucially, however, this sample is temporally situated at a time other than that of the utterance, specifically when the speaker was a boy. We can thus more accurately describe the speaker as contributing a MAN-FROM-THE-SPEAKER’S-CHILDHOOD sample; by indicating a time

other than the present, the speaker serves to isolate a temporal “slice” of a kind, and derive a sample from that¹³.

Note that all samples can’t be time-stamped with equal ease, however. Consider the contrasts given in (83).

- (83) a. ? A snake used to have legs. (cf. Snakes used to have legs)
b. 150 million years ago, a snake had legs.

Note that it’s not simply “used to” being incompatible with an IS generic—for instance, *A yellow carnation used to symbolize disdain* is perfectly felicitous. Instead, the infelicity seems to stem from describing *physical* kind-level change, properties which appear to have a baseline incompatibility with the singular nature of IS generic samples. This is likely due to a similar reason that *popular* or *widespread* generics like *#A dachshund is popular* are degraded in a generic reading; the inherent multiplicity of a property describing kind-level change, change that was not experienced by any one of its members, cannot be felicitously exemplified by a single sample. As further evidence, consider the generics given in (84), which only seem acceptable under (somewhat odd) existential readings.

- (84) a. ? Originally, an apple only grew in Central Asia
(cf. *Originally, apples only grew in Central Asia*)
b. ? In the 16th century, a pug was brought to Europe.
(cf. *In the 16th century, pugs were brought to Europe*)¹⁴

¹³Interestingly, the speaker is using this sample from the past to influence how one should conceptualize a modern MAN sample. This persuasive use is external to the actual sample itself as contributed to the discourse, however. Rather, the persuasive force stems from *why* the sample is even being introduced to the discourse in the first place—the same sample in a context that is strictly informative (e.g. workplace fashions throughout history) would not carry the same persuasive force. This illustrates how IS generics, which are somewhat persuasive in their own right as to how kinds should be conceptualized, can be parcelled with other discourse acts. That is, samples can be used as *tools* for persuasion.

¹⁴Generics like this, similar to *mankind* generics like *In 1969, man walked on the moon*, are subject to whether or not an individual can “stand” for the entire kind in an event. However, note that even in the case where a single individual walking on the moon was perceived as a “step for man” as a whole, *#In 1969, a man walked on the moon* is still infelicitous under a generic reading. Thus it seems that when an individual

Since no single apple was ever grown in Central Asia *and* not-Central Asia (e.g. it's not the case that an apple growing in Central Asia then later grew in Vermont after European colonists brought them over), (84a) is infelicitous, much like how *A snake used to have legs* is infelicitous since no individual snake-kind member ever transitioned from leggy-ness to leglessness. However, note that when the sample is *statically*¹⁵ situated in time, as in (83b) *150 million years ago, a snake had legs*, then the IS generic is perfectly felicitous. The lack of a property ascribing kind-level change, which necessitates a multiplicity of members, therefore permits a felicitous past-tensed IS generic. We can contrast this with a change that does not require multiple members, like the felicitous *A yellow carnation used to symbolize disdain*. Since a change in the symbolic perception of something can be experienced by a single individual, the property can be exemplified by a sample and the generic is felicitous.

4.4 Bonus: AI judgements of IS generics

While I have so far been discussing IS generics in the context of human felicity judgements, artificial intelligences are also able to process and evaluate generic statements. To see how an AI viewed a range of IS generic data, I chatted with ChatGPT (<https://openai.com/blog/chatgpt>) on March 31, 2023 to see how it judged many of the accomplishments something on behalf of the kind, that accomplishment still can't be felicitously predicated of a sample for that kind because of the commitment to kind-*member* representativeness. See Liebesman (2011) for further discussion of *mankind* generics.

¹⁵This problem is related to the contrast pointed out by Boneh and Doron (2013, p. 190):

- (1) a. In the nineteenth century, French teachers / a French teacher would know Latin.
- b. In the nineteenth century, French teachers / * a French teacher used to know Latin.

They argue this contrast stems from the fact that *used to* is a marker of aspect, while *would* is a modal operator, however it seems to me that this may be confounding issues of tense and genericity. They further argue that the reason *would*, which typically is not compatible with individual-level predicates like *know*, is possible here because “knowing Latin counts as inherent (rather than accidental)”, aligning with Lawler's conception of IS generics. However, I worry that the use of *would* perhaps stems from some more pragmatic phenomenon (e.g. *In the nineteenth century, a French teacher would know Latin* only seems acceptable to me if the speaker is chastising modern French teachers for not knowing Latin, so the *would* serves to contrast the modern teacher's reality with the historical teacher's), and could be confounded by sequence of tense effects.

classic generics in the literature. First, I recorded the AI's reactions to IS generic statements, and didn't ask it to make any kind of meta-judgements. It behaved remarkably human-like, finding sentences like *A barn is red* and *A room is square* questionable, accepting minority generics, as well as bristling at potentially harmful stereotypes. However, it did not seem to find issue with generics that are degraded due to more grammatical issues, like *popular* generics or oddities with tense. This perhaps indicates that ChatGPT lacks human-like grammaticality judgements. Below, the prompt is written in bold, and ChatGPT's response is given in plain text (only relevant parts of the responses are included, full responses are provided in the Appendix).

(85) *Human-like judgements*

a. **A dog has four legs**

Yes, that is correct.

b. **A dog is a dog**

Yes, that is correct.

c. **A whale is a mammal**

Yes, that is correct.

d. **150 million years ago, a snake had legs**

Yes, that is correct. Scientists believe that some of the earliest ancestors of snakes were four-legged creatures . . .

e. **A cardinal is red**

Yes, that is correct.

f. **A lion has a mane**

Yes, that is correct.

g. **A tick carries Lyme disease**

Yes, that is correct.

h. **A barn is red**

While many people might associate barns with the color red, it's important to note that barns can come in many different colors. . . . Ultimately, the color of a barn is a matter of individual taste and practical considerations,

rather than an inherent quality of barns in general.

i. **A pitbull is dangerous**

No, this is a harmful and incorrect stereotype. Pitbulls are a breed of dog, and like all dogs, they can be loving and loyal companions when trained and treated properly. While it is true that some individual pitbulls, like some individual dogs of any breed, may exhibit aggressive behavior, this does not mean that the entire breed is inherently dangerous. . . . It's important to judge dogs based on their individual behavior and not on stereotypes or generalizations based on their breed or appearance.

j. **A woman should stay in the kitchen**

That statement is not accurate and is considered to be outdated and offensive. . . .

k. **A room is square**

Not necessarily. While some rooms may be square-shaped, many rooms can have a variety of shapes and dimensions, such as rectangular, circular, or irregular. . . .

l. **A coca cola bottle is made of glass**

Coca-Cola bottles were originally made of glass, and glass bottles are still used for Coca-Cola in some parts of the world. However, many Coca-Cola bottles today are made of plastic, such as polyethylene terephthalate (PET) . . .

(86) *Non-human-like judgements (as in, no complaints about marginal grammaticality)*

a. **A dog is popular**

Yes, dogs are widely considered to be one of the most popular pets in the world. This is due in large part to their affectionate nature, loyalty, and intelligence, as well as their ability to form strong bonds with their human companions. . . .

b. **A snake used to have legs**

Yes, that is correct.

However, ChatGPT was equally unwilling to accept many BP generics which are apparently fine in the literature. For instance, ChatGPT doesn't seem to get the *#A barn is red vs Barns are red* contrast that Leslie et al. (2009) reports for human participants. The exception to this was (87c), where the BP generic was accepted but not the equivalent IS generic.

(87) a. **Rooms are square**

It's not accurate to say that all rooms are square. While some rooms may have a square shape, many rooms have different shapes and dimensions, depending on the architectural design and purpose of the space. Rooms can be rectangular, circular, irregular, or have other shapes. . .

b. **Barns are red**

While it is true that some barns are painted red, not all barns are necessarily red in color. . .

c. **Coca cola bottles are made of glass**

Yes, that is correct. (*cf. the hesitancy of (85l)*)

I then probed meta-judgements, asking the AI to determine whether a statement was true or false, after receiving the following confirmation:

(88) Me: Can you tell me if a sentence is true or false?

ChatGPT: Sure! I can certainly tell you if a sentence is true or false to the best of my knowledge based on the information I have been trained on. Please provide me with the sentence you want me to evaluate.

Interestingly, ChatGPT would often provide a "better" sentence if it didn't like the sound of the one I provided. All responses are given below to prompts that were of the form *True or false - [sentence]*. Note that many IS generics it accepted before were now judged only as "generally true" (even for definitional cases like *A dog is a mammal*), perhaps indicating that AIs, like humans, can also become vulnerable to over-analysis in meta-judgements. In any case, it made the AI more sensitive to exceptions, much like a human when asked to evaluate a generic more consciously. This resulted in the AI often suggesting a sentence that used overt quantification (e.g. *some*), narrowing the

kind (e.g. *male lions*, as opposed to just *lions*), introducing adverbs of generality (e.g. *typically, generally*), or “*type of*” relationships. Perhaps most interesting, however, is the fact that the AI often wanted to “improve” the IS generic (even uncontroversially acceptable ones like *A dog has four legs*) by turning it into a BP, suggesting that there is something more “marked” about the IS generic even for an AI model of language.

(89) *Minority generics*

a. **A cardinal is red**

This sentence is generally true. . . . Male cardinals have vibrant red plumage, while females are generally a more muted brownish-red color. So, a more accurate statement would be **“Male cardinals are red.”**

b. **A duck lays eggs**

This sentence is generally true. Ducks are a type of bird and, like many birds, they lay eggs. Female ducks typically lay their eggs in a nest on the ground or in a nest box, and they can lay several dozen eggs over the course of a season. So, a more accurate statement would be **“Ducks are egg-laying birds.”**

c. **A lion has a mane.**

This sentence is generally true. . . . Male lions have manes that are typically darker and more voluminous than those of females, and the mane can range in color from blond to black. So, a more accurate statement would be **“Male lions have a mane.”**

d. **A barn is red**

This sentence is not always true. While some barns are red, not all barns are red. . . . **“Some barns are red.”**

e. **An apple is red**

This sentence is not entirely true. While some types of apples are red, not all apples are red. . . . So, a more accurate statement would be **“Some apples are red.”**

f. **A tick carries Lyme disease**

This sentence is generally true. . . . However, it’s important to note that not all ticks carry Lyme disease, and not all cases of Lyme disease are caused by tick bites. So, a more accurate statement would be **“Some ticks, such as the black-legged tick, can carry Lyme disease.”**

(90) *Uncontroversially true generics (to humans)*

a. **A dog has four legs**

This sentence is generally true. . . . So, a more accurate statement would be **“Dogs have four legs.”**

b. **A bachelor is an unmarried male**

This sentence is generally true. The term ”bachelor” typically refers to an unmarried man, especially one who is considered to be of marriageable age. The word can also be used more broadly to refer to any man who is not currently married, regardless of his age. So, a more accurate statement would be **“A bachelor is generally defined as an unmarried man.”**

c. **A cat has a tail**

This sentence is generally true. Cats are known for their distinctive tails, which are typically long, flexible, and covered in fur. . . . So, a more accurate statement would be **“Cats generally have a tail.”**

d. **A trout can be caught by many different methods**

. . . a more accurate statement would be **“Trout can be caught using a variety of different fishing methods.”**

e. **A whale is a mammal**

This sentence is generally true. . . . So, a more accurate statement would be **“Whales are a type of marine mammal.”**

f. **A dog is a mammal**

This sentence is generally true. . . . So, a more accurate statement would be **“Dogs are a type of mammal.”**

(91) *‘Popular’ generics*

a. **A dog is popular**

This sentence is generally true. Dogs are a popular pet and companion animal for many people around the world. *ldots* So, a more accurate statement would be **“Dogs are a popular pet and companion animal.”**

b. **A prom queen is popular**

This sentence is generally true. . . . However, it’s worth noting that not all prom queens are necessarily popular, and popularity can be subjective and

dependent on a range of factors. So, a more accurate statement would be
“Being elected prom queen is often associated with popularity.”

Chapter 5

Conclusion

*“Whereas last year I was forced to confess
that we knew almost nothing about generics, this year I am
pleased to report that we now know almost something about them.”*

— John M. Lawler, *Tracking the Generic Toad*

In this thesis, I have forwarded an exemplification-based account of IS generics, specifically one which argues that IS generic NPs denote *samples* derived from kinds. Expanding on the treatment of samples from Goodman (1976, 1978) and Elgin (1983), I argued for a new class of samples, *abstract samples*, which are mental entities. Abstract samples are crafted from an individual’s conception of a kind, and are highly underspecified, exemplifying and instantiating only those properties that the speaker enforces within a discourse. This property underspecification allows us to side-step many of the typical prototype theory worries, such as logically incoherent lions that are male or female and yet neither. Furthermore, relativizing abstract samples to individuals (in the spirit of Mari’s *judge parameter*) means that these samples might not be true compared to any absolute reality. This is a departure from previous theories which evaluate IS generics relative to a larger “language community” or access rules or explanations that are part of our broader reality. However, a bonus of a sample-based view, relativized to individuals, is that it can effectively capture the fact that generics-utterers can be *wrong*, or that we can disagree about what a given generic expresses.

I demonstrated that previous accounts of IS generics were often too narrow, failing to capture the full variety of data. A sample can exemplify a property based on *any* type of generalization, be it definitional (Krifka, 2013), rule-based (Cohen, 2001), causal (van Rooij and Schulz, 2020), etc. This allows us to avoid the problem that every other view runs into: because they all attempt to explain IS generics according to the type of generalization they are allowed to express, they ultimately can't explain data which clearly expresses a different kind of generalization. I instead provide a mechanism (abstract samples) for expressing generalizations, with the oddity of particular IS generics stemming from pragmatic oddities based on how the *use* of that generic is judged. While a sample-based account might seem too powerful at first glance, I argue that practically every IS generic is possibly true given the right context (see e.g. Sterken, 2015, for the dramatic context sensitivity of generics), making it difficult for the theory to overgenerate. In particular, many of the degraded IS generics that have been used to build previous theories were argued to be the result of intricacies with kind conceptualization, making many of them pragmatic oddities rather than revealing anything deep about the underlying mechanism of IS generics. My view is highly use-based: echoing the Gricean account of exemplification forwarded by Textor (2008), I argued that abstract samples come to exemplify (mental analogues of) properties through a speaker *enforcing* that the property can be felicitously exemplified. This act of enforcing provides a mechanism for the prescriptive and quasi-universal quantification flavours of IS generics that have been noted in the literature, since the act of enforcing commits the speaker, within the discourse, to their sample not being “false advertising” for a given kind. This felicity “liability” (stemming from the act of enforced exemplification) also crucially distinguishes IS generics from BP generics, which do not require the same degree of speaker commitment.

I also touched on other phenomena related to IS generics, such as indefinite singulars in object position and tensed generics. For the latter, it is easy to see how one could craft a time-stamped sample of a kind, giving us a clear mechanism for tensed IS generics (other accounts, like a definition-based account or a rule-based account are not so straightforward—how does one access rules from the past?). Sentences with object indefinite singulars were argued to ultimately have generic readings, but be contained

within habitual statements. This leads to the oddity, but not impossibility, of some of the sentences that have been discussed in the literature. I also discussed the often humorous effect of object IS generics, once again drawing on a highly pragmatic characterization of the phenomenon to argue that flouting assumptions surrounding baseline number compatibility (i.e. using a singular to characterize a plurality of events) can lead to a more “playful” means of expressing a generality.

Future work should be dedicated to further empirical study of the phenomenon in order to gather more robust data to refine and test the theory. It would also be interesting to gather acquisition data to see how children learn IS generics relative to other forms of generics, and whether a child’s interpretation of an IS generic departs at all from an adult’s (this would be an addition to the already rich literature on children’s acquisition of generic statements, but one that has focused largely on BP generics). After all, since so much knowledge about the world is delivered via generics (likely *the* linguistic vessel for cultural transmission), studying how they are used and comprehended is a key part of understanding how humans perceive, discuss, and conceive of the world around them.

Bibliography

- Baldwin, D. A., Markman, E., and Melartin, R. (1993). Infants' ability to draw inferences about nonobvious object properties: Evidence from exploratory play. *Child Development*, 64:711–728.
- Barsalou, L. W. (1992). Frames, concepts, and conceptual fields. In Lehrer, A. and Kittay, E. F., editors, *Frames, fields, and contrasts: New essays in lexical and semantic organization*. Erlbaum.
- Barsalou, L. W. (1999). Perceptual symbol systems. *Behavioural and Brain Sciences*, 22:577–660.
- Barsalou, L. W. and Hale, C. R. (1993). Components of conceptual representation: From feature lists to recursive frames. In van Mechelen, I., Hampton, J., Michalski, R. S., and Theuns, P., editors, *Categories and concepts: Theoretical views and inductive data analysis*. Academic Press.
- Bergen, B. K. (2012). *Louder Than Words : The New Science of How the Mind Makes Meaning*. Basic Books.
- Block, N. (1983). Mental pictures and cognitive science. *The Philosophical Review*, 92:499–541.
- Boneh, N. and Doron, E. (2013). Hab and gen. In Mari, A., Beyssade, C., and del Prete, F., editors, *Genericity*, pages 176–191. Oxford University Press.
- Bosse, A. (2021a). Generics: some (non) specifics. *Synthese*, pages 14383–14401.

- Bosse, A. (2021b). Stereotyping and generics. *Inquiry*.
- Brisson, C. (1998). *Distributivity, maximality and floating quantifiers*. PhD thesis, The State University of New Jersey.
- Burton-Roberts, N. (1976). On the generic indefinite article. *Language*, 52:427–448.
- Burton-Roberts, N. (1977). Generic sentences and analyticity. *Studies in Language*, 1:155–196.
- Carlson, G. N. (1995). Truth conditions of generic sentences: Two contrasting views. In Carlson, G. N. and Pelletier, F. J., editors, *The Generic Book*, pages 224–237. The University of Chicago Press.
- Chierchia, G. (1984). *Topics in the Syntax and Semantics of Infinitives and Gerunds*. PhD thesis, University of Massachusetts at Amherst.
- Chierchia, G. (1998). Reference to kinds across languages. *Natural Language Semantics*, 6:339–405.
- Cimpian, A., Brandone, A. C., and Gelman, S. A. (2010). Generic statements require little evidence for acceptance but have powerful implications. *Cognitive Science*, 34:1452–1482.
- Cohen, A. (1999). Generics, frequency adverbs, and probability. *Linguistics and Philosophy*, 22:221–253.
- Cohen, A. (2001). On the generic use of indefinite singulars. *Journal of Semantics*, 18(3):183–209.
- Declerck, R. (1987). A puzzle about generics. *Folia Linguistica*, 21:143–154.
- Dennett, D. C. (1986). *The nature of images and the introspective trap*. Taylor & Francis Group, 2 edition.
- Dowty, D. (1987). Collective predicates, distributive predicates, and all. In *Proceedings of the 3rd ESCOL*.

- Eckardt, R. (1999). Normal objects, normal worlds and the meaning of generic sentences. *Journal of Semantics*, 16.
- Elgin, C. Z. (1983). *With Reference to Reference*. Hackett Publishing Company.
- Elgin, C. Z. (2001). The legacy of nelson goodman. *Philosophy and Phenomenological Research*, 62:679–690.
- Fine, K. (1985). *Reasoning with Arbitrary Objects*. Blackwell.
- Gelman, S. A. and Bloom, P. (2007). Developmental changes in the understanding of generics. *Cognition*, 105:166–183.
- Goodman, N. (1976). *Languages of Art: An Approach to a Theory of Symbols*. Hackett Publishing Company, 2 edition.
- Goodman, N. (1978). *Ways of Worldmaking*. Hackett Publishing.
- Graham, S. A., Kilbreath, C. S., and Welder, A. N. (2001). Words and shape similarity guide 13-month-olds' inferences about nonobvious object properties. In Moore, J. D. and Stenning, K., editors, *Proceedings of the Twenty Third Annual Conference of the Cognitive Science Society*, pages 352—357.
- Greenberg, Y. (2003). *Manifestations of Genericity*. Routledge.
- Grice, H. P. (1975). Logic and conversation. In Cole, P. and Morgan, J. L., editors, *Syntax and Semantics, Speech Acts*.
- Haslanger, S. (2011). Ideology, generics, and common ground. In Witt, C., editor, *Feminist Metaphysics: Explorations in the Ontology of Sex, Gender, and the Self*, pages 117–209. Springer.
- Hesni, S. (2021). Generics as instructions. *Synthese*, 199:12587–12602.
- Hesni, S. (2022). Normative generics and social kind terms. *Inquiry*.
- Hofherr, P. C. (2013). Bare habituals and singular indefinites. In Alda Mari, C. B. and del Prete, F., editors, *Genericity*, pages 192–221. Oxford University Press.

- Hollander, M. A., Gelman, S. A., and Star, J. (2002). Children's interpretation of generic noun phrases. *Developmental Psychology*, 38:883–894.
- Holmberg, A. (2010). How to refer to yourself when talking to yourself. In Bailey, L. R., editor, *Newcastle Working Papers in Linguistics 16*, pages 57–65.
- Joh, Y. (2020). Two different mechanisms for generics. *English Language & Literature*, 25:293–314.
- Kennedy, C. and Stanley, J. (2009). On 'average'. *Mind*, 118:583–646.
- Kirkpatrick, J. R., Dieball, A., and Knobe, J. (2021). 'you do it like this!' bare impersonals as indefinite singular generics. Working paper. Oxford University.
- Krifka, M. (2013). Definitional generics. In Alda Mari, C. B. and del Prete, F., editors, *Genericity*, chapter 15, pages 372–389. Oxford University Press.
- Krifka, M., Pelletier, F. J., Carlson, G. N., ter Meulen, A., Link, G., and Chierchia, G. (1995). Genericity: An introduction. In Carlson, G. N. and Pelletier, F. J., editors, *The Generic Book*, chapter 1, pages 1–124. The University of Chicago Press.
- Laca, B. (1990). Generic objects: some more pieces of the puzzle. *Lingua*, 81:25–46.
- Landman, F. (1989). Groups, i. *Linguistics and Philosophy*, 12:559–605.
- Lawler, J. M. (1973a). *Studies in English Generics*. PhD thesis, The University of Michigan.
- Lawler, J. M. (1973b). Tracking the generic toad. *CLS*, 9:320–331.
- Lehrer, K. (2000). Meaning, exemplarization and metarepresentation. In Sperber, D., editor, *Metarepresentations: A Multidisciplinary Perspective*, pages 299–310. Oxford University Press, Incorporated.
- Leslie, S.-J. (2008). Generics: Cognition and acquisition. *Philosophical Review*, 7(1):1–47.

- Leslie, S.-J. (2012). Generics articulate default generalizations. In Mari, A., editor, *Recherches Linguistiques de Vincennes: New Perspectives on Genericity at the Interfaces*, pages 25–45.
- Leslie, S.-J. (2014). Carving up the social world with generics. In Knobe, J., Lombrozo, T., and Nichols, S., editors, *Oxford Studies in Experimental Philosophy: Volume 1*. Routledge.
- Leslie, S.-J. (2015). Generics oversimplified. *Nous*, 49(1):28–54.
- Leslie, S.-J., Khemlani, S., Prasada, S., and Glucksberg, S. (2009). Conceptual and linguistic distinctions between singular and plural generics.
- Lewis, D. (1970). General semantics. *Synthese*, 22:18–67.
- Liebman, D. (2011). Simple generics. *Nous*, 45:409–442.
- Liebman, D. and Magidor, O. (2019). Meaning transfer revisited. *Philosophical Perspectives*, 32:254–297.
- Link, G. (1984). Hydras: On the logic of relative clause constructions with multiple heads. In Landman, F. and Veltman, F., editors, *Varieties of Formal Semantics. Proceedings of the Fourth Amsterdam Colloquium*, pages 245–257. Foris. Reprinted in *Algebraic Semantics in Language and Philosophy* (1998) (p. 77-88). CSLI Publications.
- Marantz, A. (1981). *On the Nature of Grammatical Relations*. PhD thesis, Massachusetts Institute of Technology.
- Mari, A. (2008). Analyticity under perspective: indefinite generics in french. In Grønn, A., editor, *Proceedings of SuB12*, pages 414–429.
- Mari, A. (2015). Overt and covert modality in generic sentences. *Cahiers Chronos*, 27:265–288.
- Mari, A., Beyssade, C., and Del Prete, F. (2013). Introduction. In Alda Mari, C. B. and del Prete, F., editors, *Genericity*, pages 1–92. Oxford University Press.

- McKeever, M. and Sterken, R. (2021). Social and political aspects of generic language and speech. In Khoo, J. and Sterken, R., editors, *The Routledge Handbook of Social and Political Philosophy of Language*, pages 259–280. Routledge.
- Nickel, B. (2009). Generics and the ways of normality. *Linguistics and Philosophy*, 31:629–648.
- Nickel, B. (2016). *Between Logic and the World: An Integrated Theory of Generics*. Oxford University Press.
- Nunberg, G. (1995). Transfers of meaning. *Journal of Semantics*, 12:109–132.
- Nunberg, G. and Pan, C. (1975). Inferring quantification in generic sentences. *Papers from the nth Regional Meeting, Chicago Linguistics Society*, pages 412–428.
- Reichenbach, H. (1949). *The Theory of Probability: An inquiry into the logical and mathematical foundations of the calculus of probability*. University of California Press, 2 edition.
- Rhodes, M., Leslie, S., and Tworek, C. M. (2012). Cultural transmission of social essentialism. *Proceedings of the National Academy of Sciences*, 109:13526–13531.
- Ritter, E. and Wiltschko, M. (2021). Grammar constrains the way we talk to ourselves. *Proceedings of the 2021 CLA Conference*.
- Schwartz, R. (1980). Imagery – there’s more to it than meets the eye. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 2:285–301.
- Schwarzschild, R. (1996). *Pluralities*. Kluwer.
- Searle, J. R. (1969). *Speech acts: An essay in the philosophy of language*. Cambridge University Press.
- Smart, J. J. C. (1959). Sensations and brain processes. *The Philosophical Review*, 68:141–156.
- Sterken, R. K. (2015). Generics in context. *Philosophers’ Imprint*, 15.

- Textor, M. (2008). Samples as symbols. *Ratio*, 21(3):344–359.
- Thompson, E. (2007). Look again: Phenomenology and mental imagery. *Phenomenology and the Cognitive Sciences*, 6:137–170.
- Tye, M. (1991). *The Imagery Debate*. The MIT Press.
- van Rooij, R. and Schulz, K. (2020). A causal semantics of is generics. *Journal of Semantics*, 37:269–295.
- Venn, J. (1876). *The Logic of Chance: An essay on the foundations and province of the theory of probability, with especial reference to its logical bearings and its application to moral and social science*. Macmillan and Co, 2 edition.
- Vogeleer, S. (2012). Habituals with indefinite singular objects: aspect and modality. In Mari, A., editor, *Recherches Linguistiques de Vincennes: New Perspectives on Genericity at the Interfaces*, pages 191–214.
- Wiltschko, M. (2021). *The Grammar of Interactional Language*. Cambridge University Press.
- Wolfram, W. and Christian, D. (1976). *Appalachian Speech*. Center for Applied Linguistics.
- Zaroukian, E. and Beller, C. (2012). Evaluating singular indefinites. In Galeano, C., Görgülü, E., and Presnyakova, I., editors, *Proceedings of the 40th Western Conference on Linguistics*, pages 127–138.

APPENDIX

(92) A dog has four legs

Yes, that is correct. Dogs are quadrupeds, which means they have four legs. This is one of the defining physical characteristics of dogs and is essential to their mobility and movement. Their legs are adapted to allow them to run, jump, and navigate different types of terrain. Additionally, dogs' legs are also important for their sense of balance and stability, which enables them to perform activities such as standing on their hind legs or walking on narrow surfaces.

(93) A dog is a dog

Yes, that is correct. A dog is a type of domesticated mammal that belongs to the Canidae family. They are known for their loyalty, affectionate nature, and intelligence, and are often kept as pets. There are many different breeds of dogs, each with their own unique physical characteristics, temperament, and abilities. Despite these differences, all dogs share certain common characteristics that make them unmistakably canine.

(94) A barn is red.

While many people might associate barns with the color red, it's important to note that barns can come in many different colors. The color of a barn can depend on a variety of factors, including the type of wood or materials used to construct it, the climate and weather patterns in the area, and the personal preferences of the owner. Some barns may be painted red, while others might be painted in shades of brown, gray, white, or even bright colors like blue or green. Ultimately, the color of a barn is a matter of individual taste and practical

considerations, rather than an inherent quality of barns in general.

(95) A dog is popular.

Yes, dogs are widely considered to be one of the most popular pets in the world. This is due in large part to their affectionate nature, loyalty, and intelligence, as well as their ability to form strong bonds with their human companions. Dogs can also serve a variety of roles, such as providing companionship, offering protection, performing tasks, and serving as therapy or service animals. Because of their popularity, dogs are widely available for adoption from animal shelters and rescue organizations, as well as from breeders and pet stores. However, it's important to note that owning a dog is a significant responsibility and requires a commitment of time, resources, and attention to ensure the well-being of the animal.

(96) A cardinal is red.

Yes, that is correct. The cardinal is a bird species that is widely known for its distinctive bright red plumage. Male cardinals are typically bright red all over, except for their black mask-like feathers around their beaks, while females are more muted in color, with reddish-brown feathers and touches of red on their wings, tails, and crests. The vibrant red color of the cardinal is a result of pigments in their feathers that reflect and absorb light in a particular way. This makes cardinals easy to spot, even from a distance, and they are a popular sight in gardens and backyards across much of North and South America.

(97) A lion has a mane

Yes, that is correct. Lions are large, carnivorous mammals that belong to the cat family Felidae. One of the distinctive features of male lions is their mane, which is a thick growth of hair that surrounds their necks and heads. The mane typically ranges in color from blonde to black, and can be used as a form of visual communication or to help protect the lion's neck during fights with other lions or predators. Female lions, on the other hand, do not have manes, and instead have a smaller tuft of hair at the end of their tails. The presence or absence of a mane is one of the key physical differences between male and

female lions, and is an important part of their appearance and behavior.

(98) A tick carries Lyme disease

Yes, that is correct. Lyme disease is a bacterial infection that is transmitted to humans through the bite of an infected tick. The disease is caused by the bacterium *Borrelia burgdorferi*, which is commonly found in black-legged ticks (also known as deer ticks) in many parts of the world. When a tick infected with the bacterium bites a human or animal, the bacteria can be transmitted through the tick's saliva into the bloodstream, causing a range of symptoms including fever, fatigue, joint pain, and a characteristic "bull's-eye" rash. If left untreated, Lyme disease can lead to more serious complications, including neurological and cardiac problems. To reduce the risk of contracting Lyme disease, it's important to take precautions when spending time outdoors in areas where ticks are prevalent, such as wearing protective clothing and using insect repellent, and checking yourself and your pets for ticks after spending time in wooded or grassy areas.

(99) A pitbull is dangerous.

No, this is a harmful and incorrect stereotype. Pitbulls are a breed of dog, and like all dogs, they can be loving and loyal companions when trained and treated properly. While it is true that some individual pitbulls, like some individual dogs of any breed, may exhibit aggressive behavior, this does not mean that the entire breed is inherently dangerous. In fact, many pitbulls are affectionate, gentle, and social animals that make wonderful pets.

Unfortunately, pitbulls have been the subject of negative media coverage and breed-specific legislation that has contributed to this unfair characterization of them as a dangerous breed. It's important to judge dogs based on their individual behavior and not on stereotypes or generalizations based on their breed or appearance.

(100) A whale is a mammal

Yes, that is correct. A whale is a large aquatic mammal that belongs to the order Cetacea, which also includes dolphins and porpoises. Despite living in the

water, whales are mammals and share many of the same characteristics as other mammals, such as breathing air through lungs, giving birth to live young, and producing milk to feed their offspring. Whales have a number of adaptations that allow them to live in their aquatic environment, such as a streamlined body shape, blubber for insulation, and a specialized respiratory system that enables them to hold their breath for long periods of time while diving underwater. There are many different species of whales, ranging from the largest animal on Earth, the blue whale, to the smaller porpoises and dolphins.

(101) 150 million years ago, a snake had legs

Yes, that is correct. Scientists believe that some of the earliest ancestors of snakes were four-legged creatures that lived on land during the Late Jurassic period, about 150 million years ago. These creatures, known as "stem snakes," were small, lizard-like reptiles with elongated bodies and reduced or absent limbs. Over time, as their bodies became more specialized for burrowing and hunting, these early snakes gradually lost their legs and evolved the sinuous, elongated bodies that are characteristic of modern snakes.

While the exact evolutionary history of snakes is still a subject of research and debate among scientists, the fossil record provides strong evidence for the hypothesis that snakes evolved from four-legged ancestors. Some modern snakes, such as the boa constrictor and the python, still retain small, vestigial pelvic bones that are believed to be remnants of their ancestors' hind legs.

(102) A snake used to have legs

Yes, that is correct. Some of the earliest ancestors of modern snakes were four-legged creatures known as "stem snakes" or "snake-lizards," which lived on land during the Late Jurassic period, about 150 million years ago. These creatures had elongated bodies and reduced or absent limbs, but they still retained some features of their lizard-like ancestors, such as a shoulder girdle, a pelvis, and sometimes even small hind limbs.

Over time, these early snakes evolved specialized adaptations for burrowing and hunting, which led to the gradual loss of their legs. This process, known

as limb reduction or degeneration, allowed snakes to become more streamlined and efficient in their movement and enabled them to exploit a wide range of ecological niches. Today, all modern snakes are limbless, but some species still retain small, vestigial pelvic bones, which are believed to be remnants of their ancestors' hind legs.

(103) A room is square

Not necessarily. While some rooms may be square-shaped, many rooms can have a variety of shapes and dimensions, such as rectangular, circular, or irregular. The shape of a room is typically determined by the architectural design of the building and the purpose of the space. For example, a living room or bedroom may be designed with a rectangular shape to accommodate furniture and create a cozy and functional space, while a dining room or foyer may have a more spacious and open design. Additionally, the shape of a room can be influenced by various factors, such as the location of doors, windows, and architectural features like columns or beams.

(104) A woman should stay in the kitchen

That statement is not accurate and is considered to be outdated and offensive. Women have the right to pursue any career or path in life that they choose and should not be restricted to any particular role or position based on their gender. Women have made significant contributions in all fields of society, including science, technology, engineering, arts, and politics. It's important to respect and promote gender equality, inclusivity, and diversity in all aspects of society.

(105) A coca cola bottle is made of glass

Coca-Cola bottles were originally made of glass, and glass bottles are still used for Coca-Cola in some parts of the world. However, many Coca-Cola bottles today are made of plastic, such as polyethylene terephthalate (PET) or other plastic resins, which are lightweight, durable, and cost-effective to produce. Plastic bottles also have the advantage of being recyclable, which is an important consideration for sustainability and reducing waste. Nevertheless, the iconic glass Coca-Cola bottle is still produced in some countries and is often associated

with the early history and heritage of the brand.

(106) Rooms are square

It's not accurate to say that all rooms are square. While some rooms may have a square shape, many rooms have different shapes and dimensions, depending on the architectural design and purpose of the space. Rooms can be rectangular, circular, irregular, or have other shapes depending on their intended use, such as bedrooms, living rooms, dining rooms, kitchens, bathrooms, and more. The shape and size of a room can affect its functionality and aesthetic appeal, and it's up to the designer or architect to determine the best shape and layout for a particular space.

(107) Barns are red

While it is true that some barns are painted red, not all barns are necessarily red in color. Barns can be painted or constructed in a variety of colors, such as white, brown, gray, green, blue, or even multicolored. In the past, red was a popular color for barns because it was a cheap and durable paint option made from iron oxide or other natural pigments that helped to protect the wood from weathering and insect damage. Additionally, red paint was often used because it was readily available and easy to produce, as opposed to other more expensive pigments. However, the color of a barn can depend on factors such as regional traditions, architectural styles, and personal preferences of the owners.

(108) Coca cola bottles are made of glass

Yes, that is correct. Coca-Cola bottles were originally made of glass and glass bottles are still used for Coca-Cola in many parts of the world. The first Coca-Cola bottle was made of glass in 1899, and for several decades, glass was the primary material used for bottling Coca-Cola. In recent years, plastic and aluminum cans have become more prevalent, but glass bottles are still popular among some consumers who appreciate the nostalgic value and premium feel of a glass bottle. Glass is also a sustainable packaging material, as it is 100% recyclable and can be reused many times without losing its quality.

(109) a. **An apple is red**

This sentence is not entirely true. While some types of apples are red, not all apples are red. Apples come in a variety of colors including red, green, yellow, and sometimes a combination of these colors. So, a more accurate statement would be **“Some apples are red.”**

b. **A cardinal is red**

This sentence is generally true. A cardinal is a type of bird that is commonly found in North and South America, and it is known for its bright red feathers. Male cardinals have vibrant red plumage, while females are generally a more muted brownish-red color. So, a more accurate statement would be **“Male cardinals are red.”**

c. **A duck lays eggs**

This sentence is generally true. Ducks are a type of bird and, like many birds, they lay eggs. Female ducks typically lay their eggs in a nest on the ground or in a nest box, and they can lay several dozen eggs over the course of a season. So, a more accurate statement would be **“Ducks are egg-laying birds.”**

d. **A lion has a mane.**

This sentence is generally true. A lion is a large, carnivorous mammal that is known for its distinctive mane of hair around its neck and head. Male lions have manes that are typically darker and more voluminous than those of females, and the mane can range in color from blond to black. So, a more accurate statement would be **“Male lions have a mane.”**

e. **A barn is red**

This sentence is not always true. While some barns are red, not all barns are red. The color of a barn can vary depending on a variety of factors, such as the building materials used, regional traditions, and personal preferences. Barns can be painted or stained in a wide range of colors, including red, white, gray, brown, and many others. So, a more accurate statement would be **“Some barns are red.”**

f. **A dog is popular**

This sentence is generally true. Dogs are a popular pet and companion animal for many people around the world. According to the American Veterinary Medical Association, approximately 38 % of households in the United States own at least one dog. Dogs are known for their loyalty, affection, and playful nature, and they can provide a range of benefits to their owners, including companionship, emotional support, and even physical health benefits. So, a more accurate statement would be **“Dogs are a popular pet and companion animal.”**

g. **A prom queen is popular**

This sentence is generally true. In the context of high school proms, the “prom queen” is typically a female student who is elected by her peers to receive the honor of being crowned prom queen. This title is often associated with popularity, as it suggests that the student is well-liked and respected by her classmates. However, it’s worth noting that not all prom queens are necessarily popular, and popularity can be subjective and dependent on a range of factors. So, a more accurate statement would be **“Being elected prom queen is often associated with popularity.”**

h. **A dog has four legs**

This sentence is generally true. Dogs, like most other four-legged animals, have four legs. The legs of a dog are important for walking, running, jumping, and performing other physical activities. So, a more accurate statement would be **“Dogs have four legs.”**

i. **A bachelor is an unmarried male**

This sentence is generally true. The term “bachelor” typically refers to an unmarried man, especially one who is considered to be of marriageable age. The word can also be used more broadly to refer to any man who is not currently married, regardless of his age. So, a more accurate statement would be **“A bachelor is generally defined as an unmarried man.”**

j. **A cat has a tail**

This sentence is generally true. Cats are known for their distinctive tails,

which are typically long, flexible, and covered in fur. A cat's tail can serve a variety of functions, such as helping with balance, expressing emotions, and communicating with other cats. While there may be some rare instances where a cat is born without a tail or has had its tail amputated due to medical reasons, the vast majority of cats do have a tail. So, a more accurate statement would be **"Cats generally have a tail."**

k. **A tick carries Lyme disease**

This sentence is generally true. Lyme disease is a bacterial infection that can be transmitted to humans and animals through the bite of an infected tick. The black-legged tick, also known as the deer tick, is one of the primary carriers of Lyme disease in North America. However, it's important to note that not all ticks carry Lyme disease, and not all cases of Lyme disease are caused by tick bites. So, a more accurate statement would be **"Some ticks, such as the black-legged tick, can carry Lyme disease."**

l. **A trout can be caught by many different methods**

Trout are a type of fish that can be found in rivers, lakes, and streams around the world. They are a popular game fish, which means they are often sought after by anglers who use a variety of different methods to catch them, such as fly fishing, spin fishing, bait fishing, and more. So, a more accurate statement would be **"Trout can be caught using a variety of different fishing methods."**

m. **A whale is a mammal**

This sentence is generally true. A whale is a type of aquatic mammal that belongs to the order Cetacea. Like all mammals, whales breathe air, give birth to live young, and nurse their offspring with milk. However, unlike most other mammals, whales are adapted to living in water and have a number of unique features that help them survive in their marine environment. So, a more accurate statement would be **"Whales are a type of marine mammal."**

n. **A dog is a mammal**

This sentence is generally true. A dog is a type of mammal, specifically a member of the order Carnivora and the family Canidae. Like all mammals, dogs are warm-blooded, have hair or fur covering their bodies, give birth to live young, and nurse their offspring with milk. So, a more accurate statement would be **“Dogs are a type of mammal.”**