The Harmful Feature of Generics

By

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To Sandro,
who sharpened my thinking and taught me to write.

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Cover image credits

The cover image was created by Photographer Dr. Andy Brown in the project The Image Speaks (2019), organized and funded by The University of Sheffield. The project offered PhD students the possibility to create an image that represented our research with the help of a professional photographer.

Image caption:

> *Stereotypes are smoke for which there's no fire. Often, they have no real cause. Smoke covers individuality, making everyone look the same. So do stereotypes. In my research, I analyse the linguistic form of stereotypes, generics, trying to dissolve the smoke they cause.*

Taking metaphors seriously. This is how we looked for a photo that represented my research. First of all, I isolated the central themes of my work.

My topic is generics, namely sentences that express generalizations over a kind without employing quantifiers. Despite the apparently complicated definition, they are easy sentences that we use every day, like "birds fly". Stereotypes are often expressed through generic sentences: "British are polite", "Italians are poets", "Arabs are good at math"...

What I find interesting in these sentences is their ability to essentialize, namely to lead one to believe that the members of a kind share a common nature, an essence. That is, reading or hearing "Italians are poets" leads you to believe that Italians are unified by an underlying nature, which their properties depend

on. Thus, they are poets because of their essence. Being a poet is a positive property, so there seems to be nothing problematic in this. However, believing that Italians share a common nature makes us more likely to accept negative stereotypes, like "Italians are mobsters". Indeed, if we believe that Italians share a common nature, we tend to trace the property of an individual back to their essence. Thus, upon knowing that a few Italians are mobsters, we conclude that this depends on their nature. Since this nature is shared by all Italians, we then generalize the property of being mobsters to the entire group, concluding that Italians are mobsters. This is harmful and dangerous. Such stereotypes are the basis of racism, sexism, and other forms of discrimination.

More broadly, I'm fascinated by language in general, and, in particular, by its elusive aspects. I'm interested in those phenomena that give you a fishy feeling which is difficult to track down to anything in particular. What I aim to do is figure out what triggers that feeling. Generics are one of those phenomena. The way they essentialize kinds is sneaky, and often neither the speaker nor the addressee realize what's going on. The conclusion that, say, Italians have a common essence might not be evident to the speakers, but it can influence their beliefs and behavior nonetheless. Hence, cause harm, but usually in an involuntary and unconscious way. It's collateral damage.

In my research, I try to figure out what enables generics to lead people to believe in essences of social kinds. It's not their explicit meaning. Rather, it is something they communicate implicitly. It is precisely the implicit nature of the mechanism at work that makes it difficult to recognize what's going on.

Thus, in choosing the subject for the photo, we looked for something that could represent collateral damage, an implicit meaning, or essentialisation. We relied on sayings that encode metaphors, focusing on the image they are build upon. We went for "there's no smoke without fire", that gives the idea of essentialisation and is often used as an excuse for racist behaviors. We then took a picture of smoke to evoke this saying.

Acknowledgments

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Introduction

Generics are sentences like "birds fly" and "tigers are striped". They express a generalization over a category or its members. Various experimental studies (see, e.g., (Gelman, Ware, and Kleinberg 2010), and (Rhodes, Leslie, and Tworek 2012) provided evidence that generics promote the essentialization of the categories they are about. That is, generics encourage us to believe that the categories they are about have an underlying nature responsible for the similarities among the category members. In this book, I'm interested in what linguistic features of generics, if any, make them particularly suited to promote the essentialization of the categories they are about. This is my main research question.

Sally Haslanger (2011), (2012), (2014) offers an explanation for why generics favor essentialization. She argues that generics convey that the connection between the members of the category (Ks) and the predicated property (F) "holds primarily by virtue of some important fact about the Ks as such" (Haslanger 2012: 450, emphasis in the original). When a generic gets accepted, this claim becomes common ground and licenses the inference to the claim that the Ks have F by virtue of what it is to be a K. This presupposes that there exists an essence of the category K. As a result, the category K gets essentialized. Indeed, essentializing a category amounts to believing that its members share an essence, and this chain of inferences leads to accepting that there exists an essence of category K.

Hence, Haslanger's proposal shows how generics can lead to essentializing the categories they are about. In this work, I elaborate on Haslanger's theory. I point out that Haslanger characterizes the claim conveyed by generics (namely, that the connection between

Ks and F holds primarily by virtue of some important fact about the Ks as such) as both constant and variable across contexts. I propose that the claim conveyed by generics is complex and constituted by two propositions: the robustness proposition and the explanatory implicature. The former is invariable, and the latter varies according to the context.

I apply the tests for presuppositions and implicatures to determine what type of implicit the robustness proposition (namely, the claim that the connection between Ks and F holds primarily by virtue of some important fact about the Ks as such) belongs to. The claim does not project nor pass the Hey, wait a minute test for pragmatic presuppositions. On the other hand, it is cancelable, reinforceable, indeterminable, and non-detachable. That is, it possesses four distinctive properties of conversational implicatures. Since the robustness proposition is constant across contexts, I conclude that it is a generalized conversational implicature. I rely on Stephen Levinson's (2000) theory of generalized conversational implicatures to investigate the mechanism generating the robustness proposition. I conclude that it arises due to the unmarkedness of generics: Levinson's I-principle, which applies to unmarked forms, invites the recipient to assume the strongest connection. Given that generics are unmarked, this principle applies to them, generating the implicature that the connection between Ks and F holds primarily by virtue of some important fact about the Ks as such. This allows me to show how the implicature can be worked out, which means the robustness proposition is calculable, another crucial feature of conversational implicatures. The explanatory implicature, instead, is a particularized conversational implicature. It arises from the flouting of the Maxim of Relation and further specifies what relation, relevant in the context, links category K and property F.

That generics implicate the robustness proposition partially answers my research question what linguistic features of generics, if any, make them particularly suited to promote the essentialization of the categories they are about. Haslanger's proposal explains how generics, through the robustness proposition, lead to the conclusion that category K has an essence. However, this is not sufficient to show that generics are particularly suited to promote essentialization. This requires that the robustness proposition is peculiar to generics. I argue that this is the case as similar sentences do not implicate the robustness proposition. In particular, I take into account quantified sentences, namely sentences that, unlike generics, specify what proportion of category members have the predicated property. When the property is attributed to a high proportion of category members, the sentence seems to convey that there is a robust connection between the category and the property. Since quantified sentences are marked, though, the robustness proposition cannot be induced by Levinson's I-principle because it only applies to unmarked forms. I then propose that the robustness proposition in these cases is arrived at through abductive reasoning: the best explanation for the fact that all ducks eat wheat is that a robust connection links the category of ducks and property of eating wheat. This hypothesis is consistent with the pattern I found, that shows the robustness proposition is conveyed almost always with "all", often with "most", less frequently with "many", and never with "some". So, even though some quantified sentences convey that a robust connection links category and property, only generics implicate it: the mechanisms leading to the robustness claim are different, and the generalized conversational implicature is distinctive of generics. Hence, it can explain why generics are particularly suited to foster essentialization.

My conclusion is that, as proposed by Haslanger, generics convey that "the connection between Ks and F holds primarily by virtue of some important fact about the Ks as such" (Haslanger 2012: 450, emphasis in the original). In particular, I argue that this is a generalized conversational implicature of generics, and it arises due to their unmarkedness. This implicature, which I labeled the robustness proposition, is distinctive of generics, and similar sentences either lack it or convey it through different mechanisms. The robustness proposition can explain why (and how) generics promote the essentialization of the categories they are about.

The structure of the present book is as follows. In the first chapter, I provide some linguistic background and I identify the target of my research. I am not concerned with all the sentences that have been referred to as "generic", but only with what Bernhard Nickel (2016) calls "characteristic generic", and only with those that have a bare plural subject noun phrase. I will motivate such a focus restriction by appealing to Nickel. In the second chapter, I present Ariel Cohen's (1996) probabilistic semantics of generics and Leslie (2007a) 's (2007, 2008) criticisms of it. I offer a reply to these objections, showing how Cohen can correctly account for the alleged counterexamples raised by Leslie. I further propose a way to supplement Cohen's theory that allows one to determine a priori which of the readings theorized by Cohen a given generic gets. Integrated with this, Cohen's stands out as the best account of generics among those available to date.

The third chapter is devoted to the topic of essentialism. I present Leslie's hypothesis that generics foster the essentialization of the categories they are about and some empirical evidence supporting it. Then, I present Jennifer Saul's (2017) objection to these experiments and argue that a better understanding of the

phenomenon is needed. Finally, I take into account Haslanger's proposal. I show how it can account for two phenomena: the promotion of essentialization and the different generalizations generics can convey. I conclude the chapter by pointing out that Haslanger doesn't take a stand on whether the robustness proposition is a presupposition or an implicature. Investigating this point is the main aim of the fourth chapter, where I develop my core proposal. Here, I introduce presuppositions and implicatures with their features and distinctions. Then, I apply the linguistic tests, concluding that the robustness proposition is a generalized conversational implicature. I proceed by presenting Levinson's theory, which I employ to explain how the implicature arises. In the last section, I discuss the explanatory implicature.

The fifth and last chapter explores alternative explanations and the consequences of the results of chapter four. I exclude that kind terms are responsible for the robustness proposition and argue that it is derived through abduction with some quantified sentences. I then take into account the hypothesis, predicted by Levinson's theory, that quantified sentences convey an implicature complementary to the one of generics. I show that this is not the case and that quantified sentences are not the only marked form lacking the complementary implicature predicted by Levinson's principles: technical terms and extended expressions do not convey it either. Based on these data, I propose a revision of Levinson's M-principle which aligns with my findings as it does not predict that quantified sentences, technical terms, and extended expressions convey a complementary implicature. I conclude the chapter by motivating why the robustness proposition cannot be a clausal implicature.

Chapter 1

Re-defining genericity: Critical review of the tests for genericity and identification of the research focus

This chapter provides an overview of various linguistic properties of generics. I will present different ways to characterize generics, varieties of generics, ways to distinguish generics from non-generics, and the subset of generics I will focus on in this work. But first, let me begin with a contrast. Consider (1):

(1) a. Dogs bark.
b. Dogs are sitting on my lawn.

Sentence (1-a) says something about dogs *in general*; (1-b) talks about *certain specific* dogs, those sitting on my lawn. (1-a), but not (1-b), expresses a *general fact*, a generalization. That is, (1-a), but not (1-b), is a *generic*. But what allows (1-a) to express a general fact? What makes it a generic? Theorists have given different answers, locating the source of genericity in different elements of a sentence. In the next section, I will start by presenting the analysis provided in *The Generic Book*, one of the key texts on generics.

1.1 The locus of genericity

In the introduction to *The Generic Book* (1995), Krifka and colleagues distinguish two phenomena associated with genericity: *kind-referring NPs* and *characterizing sentences*. I will present them in turn.

1.1.1 Kind-referring noun phrases

Kind-referring noun phrases are those Noun Phrases (abbreviated as "NPs") that denote or designate a kind.[1] Krifka et al. (1995) provide the following examples:[2]

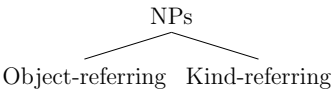
(2) a. The potato was first cultivated in South America.
b. Potatoes were introduced into Ireland by the end of the 17th century.
c. The Irish economy became dependent upon the potato.

"The underlined noun phrases (NPs) in [(2)] do not denote or designate some particular potato or group of potatoes, but the kind Potato (*Solanum tuberosum*) itself." (Krifka et al. 1995: 2). Because of that, the sentences above concern the kind Potato; they state a general fact about potatoes. That is, these sentences receive a generic interpretation and this is due to the NPs occurring in them. In other words, kind-referring NPs are the sources of genericity in (2). Kind-referring NPs are opposed to *object-referring NPs*, that refer to individuals or collections of individuals as "potatoes" in (3):

(3) Potatoes are boiling in the pot.

According to Krifka et al. (1995), then, NPs can either be *kind-referring* or *object-referring*:

Figure 1.1: Partition of NPs according to Krifka et al. (1995)



Krifka et al. (1995) provide three tests to tell kind-referring and object-referring NPs apart. As the authors specify, these tests are "indicative, and not criterial" (Krifka et al. 1995: 9). In what follows, I'll briefly present the tests.

[1] As it becomes clear from the examples they provide, Krifka et al. (1995) take "kind" not to be restricted to natural kinds: they discuss social kinds and artifacts as well. This use is shared by the other authors in the literature on generics. However, since "kinds" is sometimes used for natural kinds only, I will sometimes use the term "categories" instead. This terminological choice is meant to avoid confusion, and it does not reflect any substantial assumption.

[2] By calling these NPs "kind-referring", I do not mean to suggest that they are referential expressions. Rather, I simply adopt Krifka et al.'s nomenclature, which is standard in the literature on generics.

Test: Kind predicates

Not all types of NPs can be kind-referring, and the goal of this test is to determine *what types* of NPs can refer to kinds.[3] Intuitively, the NPs in (4) seem to indicate the category Lion:

(4) a. Lions roar.
b. The lion roars.
c. A lion roars.

These are the types of NPs that, before Krifka et al. (1995), were considered could refer to kinds. That is, the types of NPs that traditionally were thought could be kind-referring are: bare plural, definite singular, and indefinite singular NPs. Bare plural NPs are constituted of a plural noun only, as "lions" in (4-a); definite singular NPs are constituted of a singular noun preceded by a definite article, as "the lion" in (4-b); and indefinite singular NPs are constituted of singular noun preceded by an indefinite article, as "a lion" in (4-c). However, according to Krifka et al. (1995), this last type of NPs is not kind-referring (except under a taxonomic reading). They reach this conclusion based on the present test, which consists of checking for the acceptability of sentences with a *kind predicate*: the NPs that can refer to kinds are those that, paired with kind predicates, give rise to acceptable sentences.

Kind predicates are predicates like *extinct* and *invented*, that can only be predicated of kinds: an individual cannot be extinct, only a kind can. Or like *be a mammal* and *be domesticated*, that favor a kind-referring interpretation of an argument when a general term (i.e., not a proper name) is used. As the examples (from Krifka et al. 1995) below show, only definite singular, bare plural, taxonomic indefinite singular, and bare singular NPs can be combined with kind predicates and can, thus, refer to kinds according to Krifka et al. (1995):

(5) a. The lion will become extinct soon.
b. Lions will become extinct soon.
c. *A lion will become extinct soon.
d. A (certain) lion (namely the Berber lion) will become extinct soon. (taxonomic reading)
e. Bronze was invented as early as 3000 b.C.

Non-taxonomic indefinite singular NPs, like "a lion" in (5-c), do not pass the test: as shown by the unacceptability of (5-c), indefinite singular NPs cannot combine

[3]This test is number 2 in Krifka et al.'s (1995) original numbering.

with kind predicates (e.g., "extinct"). Hence, Krifka et al. (1995) do not consider these NPs as possibly kind-referring. According to them, indefinite singular NPs cannot receive a generic interpretation. Yet, sometimes, they seem to receive a generic interpretation, as in (4-c):

(4-c) A lion roars.

This is the reason why IS NPs have traditionally been considered among the NPs that can refer to kinds (see in particular Dahl 1975 and Lawler 1973). Krifka et al. (1995), though, argue that the generic reading of "a lion" in (4-c) doesn't depend on the NP being kind-referring: as discussed above, indeed, according to them, indefinite singular NPs *cannot* be kind-referring. Rather, Krifka et al. (1995) argue that "a lion" in (4-c) owns its generic interpretation to the generic character of the sentence as a whole, namely to (4-c) being a characterizing sentence. Since indefinite singular NPs only get a generic interpretation when occurring in characterizing sentences, the source of genericity in these cases, according to Krifka et al. (1995), is not the NP but the sentence itself.

Thus, Krifka et al. (1995) distinguish between NPs that can refer to kinds (i.e., bare plural, definite singular, taxonomic indefinite singular, and bare singular NPs), thus being the source of genericity themselves, and non-taxonomic indefinite singular NPs, that can get a generic interpretation only in characterizing sentences, where genericity does not come from the NP. I wil turn to characterizing sentence in section 1.1.2.

In discussing this test, Krifka et al. (1995) do not take into account number-specified NPs, like "two/three/four/... lions", and explicitly quantified NPs, like "some lions", "few lions", "many lions", "most lions", "all lions". The former are constituted of a noun preceded by a number, while the latter are constituted of a noun preceded by an explicit quantifier (i.e., "some", "few", "many", "most", and "all"). When combined with kind predicates, (non-taxonomic) number-specified and explicitly quantified NPs give rise to unacceptable sentences:

(6) a. *Two lions will become extinct soon.
b. *Three lions will become extinct soon.
c. *Four lions will become extinct soon.

(7) a. *Some lions will become extinct soon.
b. *Few lions will become extinct soon.
c. *Many lions will become extinct soon.
d. *Most lions will become extinct soon.

e. *All lions will become extinct soon.

Hence, based on this test, I argue, we can conclude that number-specified and explicitly quantified NPs cannot refer to a kind. In this respect, they are similar to indefinite singular NPs. However, while indefinite singular NPs can occur in characterizing sentences, where they receive a generic interpretation, number-specified and explicitly quantified NPs do not: in footnote two on page 3, Krifka et al. (1995) claim that characterizing sentences are opposed not only to particular sentences but also to explicitly quantified general sentences. This opposition seems to be due to a property of the Logical Form of generics: as I will discuss in section 2.1, according to Krifka et al. (1995), there is a generic quantifier GEN in the logical form of characterizing sentences. This operator must bind some variable and, thus, there must be a free variable for GEN to generalize over. If another operator, as a quantifier, binds all the variables, the resulting sentence is not characterizing. I will expand more on this point in section 2.1.

To recap, based on the results of the present test, Krifka et al. (1995) conclude that (non-taxonomic) indefinite singular NPs can only refer to objects, while bare plural and definite singular can refer to kinds. NPs with these syntactic forms, though, can refer to objects too, as the bare plural "potatoes" in (3):

(3) Potatoes are boiling in the pot.

Hence, compatibility with kind predicates is a necessary but not sufficient condition for an NP to refer to kinds. Krifka et al. (1995) provide two further tests that help determine whether a specific NP is kind- or object-referring, among those that can, in principle, refer to both (i.e., bare plural and definite singular). Let's see them in turn.

Test: Well-established kinds

This test in based on an observation by Vendler (1967), Nunberg and Pan (1975), Carlson (1977a), and Dahl (1985) concerning a peculiar behavior of definite singular NPs.[4] They pointed out that sentences with a definite singular NP whose nominal constituent is not semantically related to a well-established kind are odd under a generic reading. So, under a generic reading, while (8-a) is perfectly acceptable, (8-b) is odd and seems to only be interpretable as a particular statement concerning specific bottles only:[5]

[4]This test is number 3 in Krifka et al.'s (1995) original numbering.
[5]The symbol "??" indicates a dubious acceptability of the sentence.

(8) a. The Coke bottle has a narrow neck.
b. ??The green bottle has a narrow neck.

According to Krifka et al., this contrast is due to the fact that "there exists a well-established kind for Coke bottles, but there is no well-established kind for green bottles." (1995: 11). The authors conclude that not any nominal constituent can form a kind-referring NP: only those associated with well-established kinds can.

As Krifka et al. (1995) point out, indefinite singular NPs do not give rise to a similar contrast: (9-a) and (9-b) are both acceptable, although only the first concerns a well-established kind.

(9) a. A Coke bottle has a narrow neck.
b. A green bottle has a narrow neck.

Recall that, with the previous test, Krifka et al. (1995) concluded that non-taxonomic indefinite singular NPs cannot refer to a kind: these NPs can only be object-referring. Hence, the NPs in (9-a) and (9-b) are object-referring. This is, according to the authors, the reason why both sentences are acceptable: there is no constraint on the nominal constituent of object-referring NPs, contrary to what happens for kind-referring ones. So, while any nominal constituent can form an *object-referring* NP, to form a *kind-referring* NP a nominal constituent has to be semantically associated with a well-established kind.[6]

Krifka et al. (1995) further observe that bare nouns pattern with indefinite singular NPs in this respect. As the examples below show, both bare singular and bare plural NPs give rise to acceptable sentences even with a nominal constituent that is not associated with a well-established kind:

(10) a. Green bottles have a narrow neck.
b. Gold which is hammered flat is opaque.

Since bare singular and bare plural NPs can be formed with any nominal constituent, just like indefinite singular NPs, Krifka et al. (1995) conclude that bare nouns might have an object-referring reading. Moreover, these NPs might also have a kind-referring reading, as shown by test *Kind predicates*. "In principle, therefore, bare nouns may well have two interpretations: they can be kind-referring, as shown in the previous test, and they may also be object-referring, as shown by the facts cited here." (Krifka et al. 1995: 11).

I want to point out a few issues concerning this test. First, as the authors

[6]As Krifka et al. (1995) explicitly declare, they do not attempt to provide an analysis of what makes a kind well-established. They present it as an intuitive notion.

themselves acknowledge, it is not clear whether "it tests for reference to a kind or whether it tests only for reference to a "well-established" kind, whatever that may turn out to be in the end." (Krifka et al. 1995: 12). Second, as pointed out by Ariel Cohen (1996), the constraint on definite singular NPs does not seem to depend on whether their nominal component is semantically related to a well-established kind. Consider the following pair:

(11) a. ?The politician never misses a photo opportunity.
b. The successful politician never misses a photo opportunity.

As the examples show, the definite singular NP is acceptable with "successful politician" but not with "politician". Yet, clearly, it is not the case that the former, but not the latter, is connected with a well-established kind. It seems, then, that the distribution of definite singular NPs depends on various factors and does not have to do with the unexplained notion of "well-established" kinds.

A final issue concerns the scope of the test: the authors introduce it by saying that it "helps to distinguish object-referring NPs from kind-referring NPs" (Krifka et al. 1995: 11). However, it is not clear *how* the test does this. The test distinguishes between nominal components that can form a kind-referring NP from those that can form an object-referring one, and it identifies those *types* of NPs that are always kind-referring (namely, the definite singular NPs) from those that can have both a kind-referring and an object-referring interpretation (namely, bare nouns). It is not clear to me, though, how this helps distinguish between object-referring and kind-referring NPs. One possibility is that to check whether a bare noun is kind-referring, we can consider if its definite singular counterpart (that is, a definite singular NP formed with the same nominal constituent as the bare noun we are considering) can receive an acceptable generic reading: if it isn't, then the corresponding bare noun is object-referring. However, this would not tell us whether all the bare nouns that can successfully transformed into generically interpreted definite singular NPs are actually kind-referring or not. Moreover, Krifka et al. (1995) do not explicitly propose this application of the test.

The last test they offer, instead, is explicitly designed to determine whether a certain NP is kind-referring. Let's turn to it.

Test: Upward-entailing

Finally, Krifka et al. (1995) provide the so-called "upward-entailing" test, with the specific function of ascertaining whether a given (bare plural or definite singular)

NP *occurring in non characterizing sentences* refers to kinds or objects.[7] It consists of substituting the target NP with a less informative one, that is, with an NP that refers to a proper *subset* of the set referred to by the original NP. For example, replacing "Berber lions" with its hypernym "lions", or "lions" with "feline" or "mammals", that is, with terms that refer to higher levels of the relevant taxonomy (in this case, the biological one). If the target NP is object-referring, the substitution occurs salva veritate. When the NP is kind-referring, instead, substituting it for a less informative one can turn a true sentence into a false one: truth preservation is not guaranteed. This is illustrated by the following examples:

(12) [Context: the Berber lions of the zoo escaped]

a. *Berber lions* escaped from the zoo. (true)

b. *Lions* escaped from the zoo. (true)

(13) [Context: the Berber lions, unlike other subspecies of lions, became extinct]

a. *Berber lions* are extinct. (true)

b. *Lions* are extinct. (false)

If some *Berber lions* escaped from the zoo, then it is also true that some *lions* (or *felines* or *mammals* or *animals*) did. That's because a Berber lion is a particular type of lion (and of feline, mammal, and animal), and *each* individual Berber lion is also a lion (a feline, a mammal, and an animal). Hence, an episode of zoo-escaping that involves a Berber lion also involves a lion (a feline, a mammal, and an animal) because that individual Berber lion is a lion (a feline, a mammal, and an animal). So, when predicating something about *individual* Berber lions, we can substitute the NP "Berber lion" for a less informative one, salva veritate. But if we are saying something about Berber lions *in general*, about the *kind* Berber lion, then this monotonicity effect does not hold. That's because something true of a certain kind might not hold for other kinds higher in the taxonomy. For example, while lions have manes, this is not true of felines (or mammals or animals) in general. So, we cannot conclude that *lions* are extinct (13-b) from the fact that *Berber lions* are extinct (13-a). Indeed, while the latter is true, the former is false.

This test, as Krifka et al. (1995) observe, only works in upward-entailing contexts (hence the name "upward-entailing"). That is, it doesn't work for NPs that occur in negated sentences. Moreover, it doesn't work for NPs occurring

[7] This test is number 6 in Krifka et al.'s (1995) original numbering.

in characterizing sentences, that is sentences that express a generalization over individuals or events (see the next section for a definition and analysis of characterizing sentences). "This is so because characterizing sentences have (what we will soon call) a "restrictor" position; and in this position neither kind nor object-referring NPs show monotonicity phenomena." (Krifka et al. 1995: 14). As the following examples show, in negated and characterizing sentences, truth preservation is guaranteed not even upon substitution of object-referring NPs:[8]

(14) [Context: the Asian lions and not any other animal escaped from the zoo]
   a. *Berber lions* did *not* escape from the zoo. (true)
   b. *Lions* did *not* escape from the zoo. (false)

(15) a. *Berber lions* are well adapted to cold weather. (true)
   b. *Lions* are well adapted to cold weather. (false)

(16) a. *A Berber lion* is well adapted to cold weather. (true)
   b. *A lion* is well adapted to cold weather. (false)

(17) [Context: Simba is a Berber lion]
   a. *Simba* is well adapted to cold weather. (true)
   b. *Lions* are well adapted to cold weather. (false)

Sentences (15-a), (16-a), and (17-a) are characterizing, and in neither case is it possible to substitute the NP salva veritate: in all three cases, this substitution turns a true sentence into a false one. Importantly, this happens also for sentences like (16-a) and (17-a), whose NPs are object-referring: an indefinite singular NP, which, according to test *Kind predicates* can only refer to kinds, and a proper name, which refers to the individual Simba. That is, when occurring in characterizing sentences, even substituting an object-referring NP does not guarantee truth-preservation.

To recap, the present test doesn't work when applied to negated sentences (like (14-a) or characterizing ones (like (15-a), (16-a) and (17-a)): it only works in upward-entailing contexts, namely, "non-negative" and non-characterizing contexts (like (12-a) and (13-a).

In this case, either, Krifka et al. (1995) do not explicitly say *how* to apply the test in order to determine whether an NP refers to a kind or an object. Arguably, the idea is that *if* truth is preserved upon substitution (in non-negated non-characterizing sentences), *then* we can conclude that the NP refers to an object.

[8]Examples (15) and (16) are Krifka et al.'s (1995: 14).

That is, it seems that for Krifka et al., not only object-referring NPs "can be replaced by "less informative" NPs without making the sentence false" (1995: 13). Rather, they seem to assume that it works the other way round as well: the fact that truth is not preserved upon substitution exposes the kind-referring nature of the (substituted) NP.[9] This, though, is not explicit in their presentation of the test.

In presenting these tests, I made reference to characterizing sentences a few times. But what are they exactly? And how can we identify them? In what follows, I'll focus on this type of sentence.

1.1.2 Characterizing sentences

Characterizing sentences "do not express specific episodes or isolated facts, but instead, report a kind of a *general property*, that is, report a regularity which summarizes groups of particular episodes or facts." (Krifka et al. 1995: 2, emphasis in the original). The authors provide the following examples of characterizing sentences:

(18) a. John smokes a cigar after dinner.
b. A potato contains vitamin C, amino acids, protein and thiamine.

Sentence (18-a) reports, according to Krifka et al., "some kind of generalization over events" (1995: 2). (18-b), instead, does not report a generalization over *events*, but over "properties of individual potatoes" (*ibidem*).

According to Krifka et al., this source of genericity is a "feature of the whole sentence" (1995: 3).[10] The authors emphasize that the type of genericity displayed by (18-a) and (18-b) is distinct from the one related to the NP. This can be appreciated by the fact that the sentences in (18) receive a generic reading

[9]Notice that the fact that truth *is* preserved upon substitution would not, instead, necessarily demonstrate that the NP is object referring: the two sentences might have the same truth-value by chance. To appreciate this point, take into account the pair below:

(i) a. *Tyrannosaurus reges* are extinct. (true)
b. *Dinosaurs* are extinct. (true)

Both (i-a) and (i-b) are true, but this doesn't prove that "Tyrannosaurus reges" is object-referring. Rather, it is kind-referring: it is the subject of "extinct", which is a kind-predicate and, thus, can only combine with kind-referring NPs. Both (i-a) and (i-b) are true not because of a monotonicity effect showed by the NP of the former, but rather by chance, because both Tyrannosaurus reges and dinosaurs in general are extinct.

[10]A partially different analysis is provided in Mari, Beyssade, and Del Prete (2013). In particular, they argue that genericity in (18-a) comes from the VP rather than being a feature of the whole sentence.

even though their NPs are object-referring. Indeed, "John" refers to an individual, and "a potato" is an indefinite singular NP, thus it cannot refer to a kind, as established with test *Kind predicates* above. That (18-a) and (18-b) receive a generic reading (i.e., they express a general statement) while having an object-referring NP shows that the generic reading is not due to NP, but it comes, so to speak, from a different source. From this observation, Krifka et al. (1995) conclude that kind-referring NPs and characterizing sentences are two distinct types of genericity. Importantly, this does not mean that they are incompatible; rather, these two phenomena can occur combined (see section 1.1.3).

Characterizing sentences are opposed to *particular sentences*, "which express statements about particular events, properties of particular objects, and the like" (Krifka et al. 1995: 3). Examples of particular sentences are (1-b) from above (reprinted here) and (19) below:

(1-b) Dogs are sitting on my lawn.

(19) John is smoking.

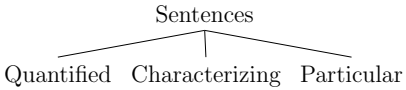
As mentioned before, Krifka et al. (1995: 3, footnote two) claim that characterizing sentences are also opposed to explicitly quantified general sentences ("quantified sentences" for short), as (20):

(20) Each potato in this room was grown in Alberta.

However, Krifka et al. state that "characterizing sentences put no limitations on what kinds of NPs may occur in them" (1995: 8) and explicitly mention quantified NPs. So, it is not clear whether they take explicitly quantified sentences to be opposed to characterizing sentences or to be included among them. As mentioned above, the logical form of characterizing sentences lacking an explicit quantifier seems to be different from that of explicitly quantified sentences (an issue explored in section 2.1). Hence, there seems to be a reason to tell these types of sentences apart. Therefore, I will consider characterizing sentences distinct from quantified sentences, according to what the authors claim in footnote two.

The classification of sentences presented so far can be represented as follows:

Figure 1.2: Partition of sentences according to Krifka et al. (1995)



How can we distinguish between these types of sentences? Quantified sentences are quite easy to recognize: they are identified by the occurrence of an explicit quantifier. Telling characterizing from particular sentences, instead, is not a trivial task since "[l]ike kind-referring NPs, they often are not clearly marked" (Krifka et al. 1995: 6). However, the authors identify certain constructions that enforce a characterizing reading:

1. adverbs like "usually", "typically", "always", "often", "sometimes", "rarely", "never", etc.;[11]
2. auxiliary constructions in the past tense like the English "used to";
3. agentive nouns, like "smoker";
4. the derivation of deverbal adjectives with the suffix "-able", like "understandable";
5. verbal predicates in the middle voice, as in "This shirt *washes easily*.";
6. special lexical items like "to have to habit/inclination/disposition", "to frequent", "to tend to", "a typical" (before an NP);
7. specialized morphological forms (absent in English), as the verbal prefix "-hu" in Swahili.[12]

Moreover, as for kind-referring NPs, Krifka et al. (1995) provide a battery of (indicative, as they specify) tests to identify characterizing sentences. I present them below.

Test: Adverbs

This test aims to distinguish characterizing from particular sentences.[13] It consists of adding an adverb like "usually" or "typically" to the target sentence. If the insertion causes only a *minor* change in meaning, then the original sentence is characterizing. On the other hand, "[i]f the original sentence is particular, these adverbs change the meaning from a report of a specific event or a particular fact

[11]Notice, however, that these adverbs seem to involve explicit quantification, which clashes with the generic operator present in the logical form of characterizing sentences. See section 2.1

[12]Notice that if all and only characterizing sentences in Swahili contained this prefix, then studying its semantics would be crucial to understanding this form of genericity. However, Swahili provides other ways to express characterizing sentences. Even in a language with a specialized morpheme, there are unmarked ways to express genericity.

[13]This test is number 1 in Krifka et al.'s (1995) original numbering.

to a general rule." (Krifka et al. 1995: 9). The authors illustrate how this test works by means of the following examples:

(21) a. A lion has a bushy tail.
b. A lion *usually* has a bushy tail.

(22) a. A lion stood in front of my tent.
b. A lion *usually* stood in front of my tent.

While the first pair of sentences are close in meaning, adding "usually" to (22-a) results in a quite different sentence: (22-a) reports a specific event, but (22-b) expresses a regularity.These facts reveal (21-a) to be characterizing and (22-a) to be particular.

Test: Stative and dynamic

This test too helps identify characterizing sentences.[14] It makes use of the distinction between stative and non-stative (or dynamic) sentences. When describing the test, Krikfa et al. characterize this distinction in an intuitive way: they just say that it roughly corresponds to the distinction between sentences that express regularities (i.e., characterizing sentences) and those that report particular events (i.e., particular sentences). A few pages later, though, they offer this more precise definition: "[s]tative sentences express a *property* of the subject referent; dynamic sentences report an *event* in which the subject referent is involved." (Krifka et al. 1995: 16, emphasis in the original). The authors claim that all characterizing sentences are stative. Particular sentences can be stative, though they usually are dynamic.[15]

Given that characterizing sentences are always stative, Krifka et al. (1995) claim that a linguistic form that excludes stative predicates will also rule out characterizing interpretations.[16] English progressive is such a form: it is not possible to use it with stative predicates, as the unacceptability of "John is weighting 175 pounds" shows. Hence, the authors argue that "it is very difficult to transform a characterizing sentence into the progressive without losing its generic character."

[14]This test is number 4 in Krifka et al.'s (1995) original numbering.

[15]They provide "Simba is in the cage" as an example of a particular dynamic sentence. Indeed, according to Krifka et al., "[t]ough stative, [sentences like] these are also episodic, because they do not express long-lasting properties and because they pattern with other episodics" (1995: 16-17), as for example the *ser/estar* distinction in Spanish.

[16]Although Krifka et al. (1995) talk about stative *sentences* in the other passages, even on the same page, in a few sentences on page 12, they write "stative *predicates*". They do not explicitly discuss the relation between stative *predicates* and *sentences*, but it seems reasonable to assume that stative *sentences* are those with stative *predicates*.