Revisiting kind predication in Italian[1]

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Abstract.

In this work, I present novel data form Italian, showing that the flavor of generic sentences interacts with mood. Definite plural generics may receive a law-like or an accidental flavor when the subject is modified by a relative in the indicative. However, when the subject is modified by a relative in the subjunctive, it can only receive a law-like reading. I argue that this data is explained if we extend to kinds, standardly seen as intensional plural entities, the tools already used in the treatment of referential plurals, and specifically the distributive operator. I propose that the interaction between the flavor of generic sentences and the presence of the subjunctive is due to a structural ambiguity in Italian definite plural generics. The optional insertion of the distributive operator in plural definite generics gives rise to two LFs. (i) If *DIST* is not inserted, the kind is interpreted in the restriction of GEN, and we get the usual LF. The modal nature of this structure yields the law-like reading, and licenses the subjunctive. (ii) If it is inserted, it distributes the predicate over actual members of the kind, yielding the accidental reading. The subjunctive is then not licensed, as it cannot be interpreted in the modal environment provided by the restriction of GEN. This also predicts that singular indefinite generics cannot receive accidental readings, as they don't denote kinds. I finally argue that a similar reasoning provides a fresh perspective on English bare plurals.

Keywords: kind predication, genericity, plurals.

1. Introduction

Consider the previously unobserved contrast in (1): in Italian, while law-like generalizations allow for relatives both in the subjunctive and in the indicative, accidental ones only allow for the indicative:

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(1) I candidati che si {**presentano/presentino**} con molto anticipo non vengono
The candidates that REFL. {present-**ind.**/present-**subj.**} with much advance not get-ind.
assunti.
hired.
*'Candidates that {show up-**ind.**/show up-**subj.**} far in advance don't get hired.'*

a. *Nervous people unwanted. A rule disqualifies whoever shows up too early.*
hfill {**ind.**✓ **/subj.**✓ }

b. *'Oh, how funny!...People who showed up very early happened not to get hired.'*
{**ind.**✓ **/subj.**#}

In this work, I propose that this is due to a structural ambiguity in Italian definite plural generics. Assuming that definite plurals can denote kinds, and that kinds are plural entities (cf. Chierchia, 1998), we expect the distributive operator *DIST* to operate on kinds just like it does on sums denoted by referential plurals.

Its optional insertion then gives rise to two structures.

(i) If *DIST* is not inserted, the kind is interpreted in the restriction of GEN, and we get the usual LF. The modal nature of this structure yields the law-like reading, and licenses the subjunctive.

(ii) If it is inserted, it distributes the predicate over actual members of the kind, yielding the accidental reading. The subjunctive is then not licensed, as it cannot be interpreted in the modal environment provided by the restriction of GEN.

This also predicts that singular indefinite generics in Italian cannot receive accidental readings, as they don't denote kinds. Finally, I argue that a similar reasoning provides a fresh perspective on English.

2. Background

It has long been noticed that English singular indefinites have a more restricted distribution than bare plurals.

(2) a. # A madrigal is popular. (ACCIDENTAL)
b. A madrigal is polyphonic. (LAW-LIKE)

(3) a. Madrigals are popular. (ACCIDENTAL)
b. Madrigals are polyphonic. (LAW-LIKE)

The same holds for Italian singular indefinites and plural definites, as well as for other Romance languages like French: plural definites, but not singular indefinites, are compatible with accidental readings.

(4) a. #Un madrigale è popolare. (ACCIDENTAL)
A madrigal is popular.
'A madrigal is popular.'
b. Un madrigale è polifonico. (LAW-LIKE)
A madrigal is polyphonic.
'A madrigal is polyphonic.'

(5) a. I madrigali sono popolari. (ACCIDENTAL)
The madrigals are popular.
'Madrigals are popular.'
b. I madrigali sono polifonici. (LAW-LIKE)
The madrigals are polyphonic.
'Madrigals are polyphonic.'

There is no consensus analysis of this contrast, which is puzzling on classical views, as (2a) and (3a) were thought to have the same LF involving GEN. Krifka *et al.* (1995) raised the possibility that (3a) is felicitous because it involves kind predication as in (6) (cf. Carlson, 1977, too), and not generic quantification, as in (7).

(6) $popular(^{\cap}madrigals)$

(7) $\text{GEN}_x[madrigal(x)][popular(x)]$

Cohen (2001) argues against this: clear direct kind predication with bare plurals resists modification by Q-adverbs, as shown in (8), unlike characterizing sentences, as in (9). Since GEN is a silent Q-adverb, this appears to suggest that it is absent in kind predication, but present in (3a).

(8) *Lions are usually extinct.

(9) Madrigals are usually popular.

Others have argued against Krifka *et al.*'s idea by invoking the behavior of bare plurals with respect to binding: (10a) does not mean that the cat kind likes the cat kind, as in (10b) (Chierchia, 1998 a.o.).

(10) a. Cats like themselves. b. $like(^{\cap}cats, ^{\cap}cats)$

Subsequently, two families of views developed. A good representative of 'ambiguity' theories is Cohen (2001), who proposes that bare plural generics are ambiguous between a 'rule' reading and a probabilistic reading, while singular indefinite generics can only refer to rules (see also Krifka, 2003; cf. Mari *et al.* (2012)). Greenberg (2004) is a good representative of 'one meaning' theories: accordingly, bare plural generics unambiguously involve GEN, just like singular indefinites. However, bare plurals induce a more 'tolerant' accessibility relation for GEN than singular indefinites.

3. Proposal

I combine insights from these theories. In the spirit of Cohen, I propose that definite plural generics are ambiguous between an LF yielding law-like readings and one that results in accidental readings. With Cohen and Greenberg, I take the LF giving rise to the law-like reading to involve GEN.

Crucially however, in the spirit of Krifka *et al.* and *contra* Greenberg and Cohen, I take the accidental reading of definite plurals to be the result of kind predication, which is mediated via a distributive operator.

To set the stage, following Chierchia (1995;1998) (a.o.), I assume that GEN is a conditional-like operator that is part of the verbal aspect: it gives rise to both habitual readings like (11) and generic quantification, as in (12). Its scope is its c-command domain, its restriction what locally c-commands it.

(11) Gianni fuma.
Gianni smokes.
'*Gianni smokes*'.
$\text{GEN}_{x,s}\big(x \leq \mathit{gianni} \wedge \mathit{in}(x,s) \wedge C(x,s)\big)\big(\mathit{smoke}_s(x)\big)$

(12) I leoni cacciano.
The lions hunt.
'Lions hunt'
$\text{GEN}_{x,s}\big(x \leq {}^{\cap}\mathit{lions}_s \wedge \mathit{in}(x,s) \wedge C(x,s)\big)\big(\mathit{hunt}_s(x)\big)$

'*C*' in (11) and (12) is a variable whose value is contextually supplied, restricting the domain of GEN to appropriate individuals and situations.

Italian definite plurals can denote kinds, since they support predication of kind-specific predicates like 'extinct' (Carlson, 1977; Chierchia, 1998).

(13) I leoni sono estinti.
The lions are extinct.
'Lions are extinct.'

I assume that kinds are plural entities (cf. Chierchia, 1998; Dayal, 2004 a.o.): ${}^{\cap}\mathit{lions}$ denotes, at a given world, the plural individual made up by all lions. When dealing with referential plurals, the distributive operator is used to capture the behavior of distributive predicates (as opposed to collective ones). In sentences like (14), the observed ambiguity can be seen as structural, i.e. deriving from the optional insertion of *DIST*.

(14) The children lifted the piano.
(each of them separately, in subgroups, or all of them together)

(15) a. $[\![\mathit{DIST}]\!] = \lambda P.\lambda x.\forall y\big(y \leq_{\mathit{atom}} x\big) \rightarrow \big(P(y)\big)$ (Roberts, 1987)

The novel contribution of this work is that since kinds are plural entities, it is possible to distribute predicates over them via *DIST* when they are interpreted with respect to the actual world.[2] Then we expect sentences like (12) to be structurally ambiguous between a reading like (16a) and one like (16b), depending on whether *DIST* is insterted above ***gen***.

(16) I leoni cacciano.
The lions hunt.
'Lions hunt.'

a. ***Bona fide generic***:
$\textsc{Gen}_{x,s}\big(x \leq {}^{\cap}lions_s \wedge in(x,s) \wedge C(x,s)\big)\big(hunt_s(x)\big)$

Paraphrase: *'Generally, if x is a member of the lion kind, it hunts'*

b. ***Distributive kind predication***:
$[DIST[\lambda x.\textsc{Gen}_{x,s}\big(y \leq x \wedge in(y,s) \wedge C(y,s)\big)\big(hunt_s(y)\big)]]({}^{\cap}lions)$
$=$
$\forall x\Big(x \leq {}^{\cap}lions_s\Big) \rightarrow \Big(\textsc{Gen}_{y,s'}\big(y \leq x \wedge in(y,s') \wedge C(y,s')\big)\big(hunt_{s'}(y)\big)\Big)$

Paraphrase: *'All individuals that are lions <u>in the actual world</u> have the habit of hunting'*

4. Explaining the puzzles.

4.1. Flavors of genericity.

Now we can explain the difference between Italian definite plurals and singular indefinites.

- In the *bona fide generic* reading, the NP is in the restriction of GEN, whose modality results in the law-like reading.
- In the *Distributive kind predication* reading, we have quantification over *actual* lions; whence the accidental reading.

As is standard, *DIST* is weaker than a universal quantification such as the one expressed by *each*. Rather, it is the source of homogeneity and non-maximality when combining with definites (Schwarzschild, 1996; Križ, 2016; Križ and Spector, 2021).

What about the singular indefinite? The fact that it does not support kind predication, as shown in (17), shows that it cannot denote a kind (cf. Carlson, 1977; Chierchia, 1998, a.o.):

(17) #Un leone è estinto.
A lion is extinct.
'A lion is extinct.'

[2]Notice that the same could be achieved by adopting, instead of Roberts' *DIST*, Schwarzschild's (1993) $*$ operator. As standard, the $*$ operator would have to be always inserted. In this case, in the (16a) the cover function would simply return the whole kind, while in (16b) it would return atoms composing the kind.

In (18), the singular indefinite can thus provide a property for the restriction of GEN (cf. (18a)) or scope out and get an existential reading (cf. (18b)).

(18) a. $\text{GEN}_{s,x}\big(lion_s(x) \wedge in(x,s) \wedge C(x,s)\big)\big(hunt_s(x)\big)$
b. $\exists x.lion_s(x) \wedge \text{GEN}_{y,s'}\big(y \leq x \wedge in(y,s') \wedge C(y,s')\big)\big(hunt_{s'}(x)\big)$

This derives the constrast, as shown in the table below:

Table 1.

	BONA-FIDE GENERIC (☞Law-like flavor)	DISTRIBUTIVE PREDICATION (☞Contingent flavor)
SINGULAR INDEFINITE	✓	*
DEFINITE PLURAL	✓	✓

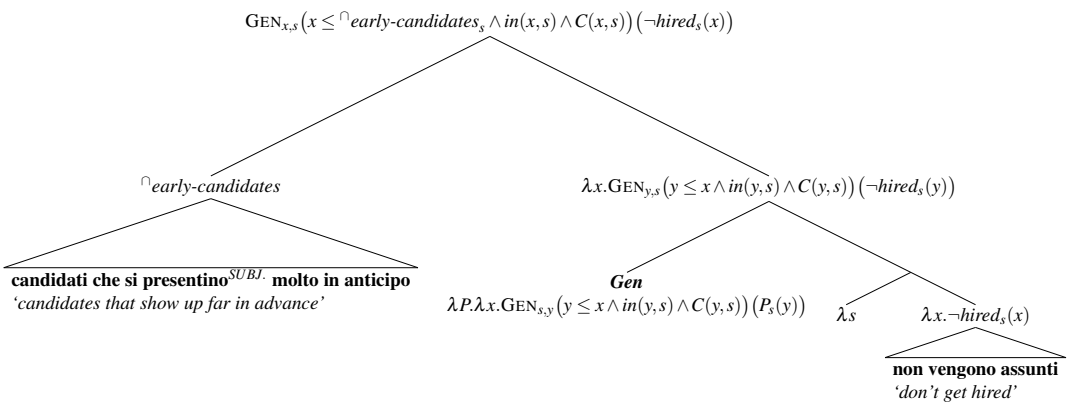
4.2. Subjunctive licensing in Italian

Getting to the contrast in (1) from which we started, now we can explain why relatives in the subjunctive are felicitous only in the case of law-like generalizations. The Italian subjunctive is licensed by modal environments such as the restrictor of GEN (cf. Farkas, 1981; Panzeri, 2006). In the structure that gives rise to the *Distributive Kind Predication* reading (cf. the structure (20)), the relative inside the subject DP cannot be interpreted in the restrictor of GEN: the subjunctive is thus not licensed, and that structure is ruled out. As a result, when the subject is restricted by a subjunctive, the only possible structure is (19), leaving the *bona fide Generic* reading as the only outcome.

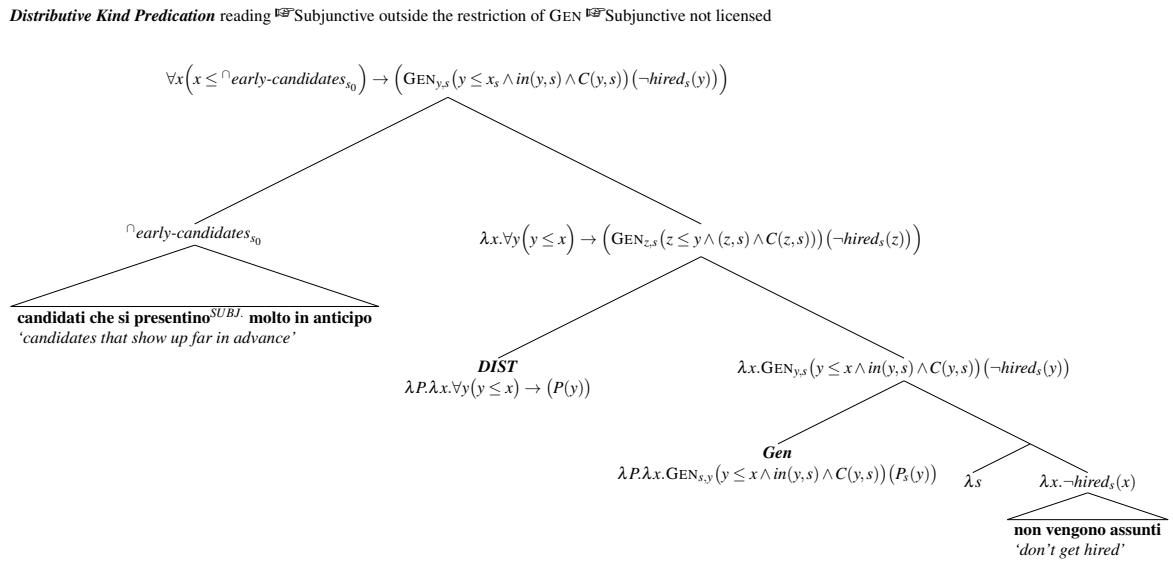
Notice that the present account is immune to the criticisms of the idea of kind predication from (8)-(10). The felicity of explicit Q-adverbs in sentences like (9) is explained by the fact that they can modify the *bona fide Generic* reading. Concerning binding, because we resort to *DIST*, we do not predict wrong LFs like (10b).

(19)

Bona-fide Generic reading ☞Subjunctive in the restriction of GEN ☞Subjunctive licensed



(20)



5. An extension to English

English bare plurals can denote kinds, as (21) is acceptable (cf. Carlson, 1977, a.o.):

(21) Lions are extinct.

An extension of the present account to English derives the contrast in (2)-(3) in essentially the same way as for Italian: bare plurals support distributive kind predication, singular indefinites don't.

This also straightforwardly explains universal readings of bare plurals in episodic contexts (cf. Condoravdi, 1994; Dayal, 2013; Chierchia, 2022), where verbal aspect does not provide GEN. This results in a perspective that is close to what Dayal (2013) and Chierchia (2022) propose for such cases.

(22) Bears are hibernating.
$[DIST[\lambda x.hibernating(x)]]({}^{\cap}bears)$

If we replace the bare plural with a singular indefinite in a sentence like (22), the singular indefinite can only be interpreted existentially. This is expected, since it cannot denote a kind.

(23) A bear is hibernating. {∃, *∀}

The only data point that is left to explain are existential readings of English bare plurals, such as the most salient reading of (24):

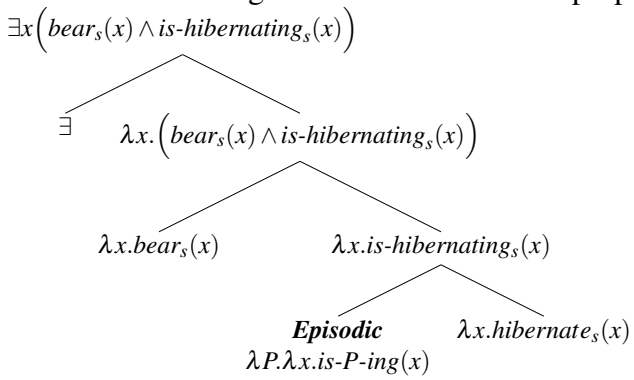
(24) Bears are destroying my garden.

Kind-based theories (e.g. Chierchia, 1998) view English bare plurals as denoting kinds in most environments: in kind readings, in generic environments, and in existential readings (via Type-Shifting via the operation of Derived Kind Predication). The only case in which they receive a property-level interpretation is when providing a restriction for quantifiers (as in e.g. 'all bears'). Property-based theories (e.g., Krifka, 2003) view bare plurals as always denoting properties, except in kind readings. Mixed theories like Longobardi (2001) and Cohen (2020) view English bare plurals as systematically ambiguous between a weak indefinite and a kind reading, but do not provide an account of universal readings of bare plurals in episodic readings. Given the arguments laid out in this paper, we can put forward an account of such readings within a mixed theory. We know that English bare plurals can denote properties (alongside kinds) as, for instance, they can provide restrictions for quantifiers, or be the coda of copular constructions:

(25) a. Three bears are playing.
b. Those are bears.

Then, it is possible that bare plurals are *systematically* ambiguous between kinds and properties, and that when they denote a property, they get existentially closed. As is standard, existential closure only applies to properties (or free variables in analyses as Heim, 1982). *DIST*, instead, only applies to sums.[3]

(26) Bears are hibernating property-denoting bare plural, $\exists$ reading

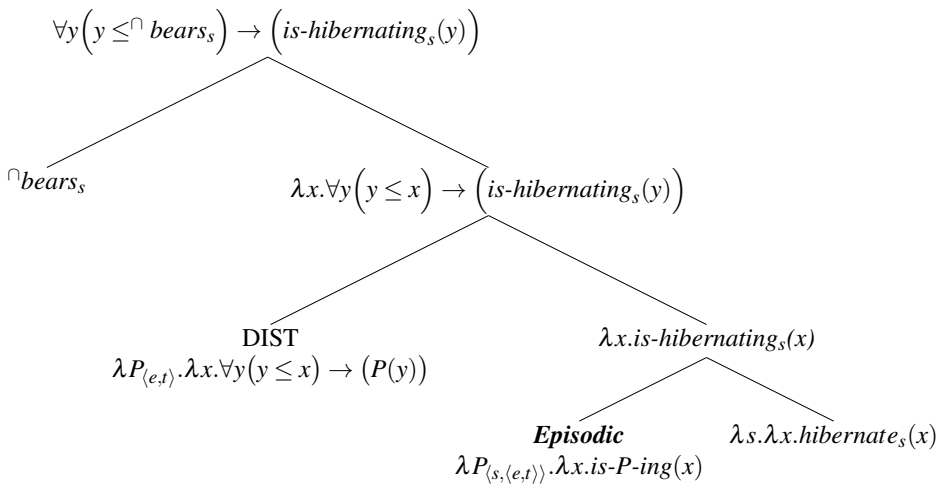


(27) Bears are hibernating kind-denoting bare plural, $\forall$ reading

[3]It is well known that bare plurals cannot take wide scope, as shown by the classical example in (i). which does not have the reading in (ia).

(i) I've been killing mosquitos for an hour.
a. **Cannot mean:** there are some mosquitos I have been killing for an hour

This is handled by the standard assumption that existential closure should apply as low as possible (cf. Krifka 2003, Cohen 2007, a.o.).



This view predicts that existential and universal episodic interpretations should be both systematically available, and their salience should be modulated by context. This seems to be the case. A sentence such as “students are celebrating" more naturally receives a (near-)universal interpretation in a context like (28), while the context in (29) seems to favour an existential interpretation.

(28) Context: it is the beginning of the academic year, and there is an opening ceremony at the university of Bochum.
   a. (Today...), students are celebrating. ∀

(29) Context: there is a lot of noise outside the classroom, so A asks B what is going on. B doesn’t know either, goes out, checks, comes back, and says:
   a. (Oh, it’s nothing...) Students are celebrating. ∃

6. Conclusion

This paper has argued that a number of puzzling facts in the interpretation of definite plurals in Italian and bare plurals in English can be quite straightforwardly explained if we assume that *DIST* can apply to kinds just like it applies to sums denoted by referential plurals. This is independently motivated by the fact that (i) definite plurals in Italian and bare plurals in English can denote kinds, as they support kind-specific predicates, and (ii) kinds are taken to denote intensional sums, i.e. functions from worlds to plural entities. This assumption strightforwardly explains the fact that definite plurals in Italian and bare plurals in English are compatible with ‘accidental’ generalizations, which are yielded by distribution of a property over actual members of the kind, while singular indefinites cannot have this reading, as they cannot denote kinds. It also explains why relatives in the subjunctive are only compatible with law-like generalizations: the subjunctive is licensed by the restrictor of the generic quantifier, but in the case of accidental generalizations, distributivity prevents the subject DP from being interpreted inside the restrictor of GEN.

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