

A Unified Analysis of the Englisch Bare Plural

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What are bare plurals?

- Bare plurals: Noun Phrases with no (visually present) quantifier or determiner before the head noun.
- Abbreviated by: **ØNP** or **_**
 - examples:
 - *Dogs* bark.
 - *Living in caves* was not funny!
 - *Cars* crashed on the A7 today.
- Why are they special?

Three readings for \emptyset

- \emptyset_{univ} : Called generic use. Can be further subdivided:
 - \emptyset dogs are mammals. (strict universal, all dogs are)
 - \emptyset dogs are nice pets. (with some exceptions)
 -
- \emptyset_{ex} : Called indefinite plural.
 - \emptyset doctors tried to save the dying boy. (only 3 did)
 -
- \emptyset_{kind} : Called kind use.
 - \emptyset dinosaurs are extinct. (this is just true)

1) \emptyset NP = Plural counterpart to “a”?

- Notion arises due to similarities
 - both have generic uses:
 - *A cat bears live young vs. Cats bear live young*
 - both appear as singular-plural counterparts in predicate-nominals
 - *Fido is a dog vs. Fido and Lassie are dogs*
- Determiners:

	singular	plural
indefinite	<i>a dog</i>	<i>\emptyset dogs</i>
definite	<i>the dog</i>	<i>the dogs</i>

A semantic interpretation

- If $\emptyset NP$ is the counterpart to “a” it should share all relevant semantic properties
 - except those attributed to plurality
- Interpretation: “a” = Esg vs. $\emptyset NP$ = Epl
 - *A dog chased Mel down the street.*
 - (Esg) (Dog(x) & x chased Mel down the street)
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 - *Dogs chased Mel down the street.*
 - (Epl)(Dog(x) & x chased Mel down the street)

Arguments against the plural counterpart notion

- The bare plural does not seem to be the counterpart to the indefinite singular “a”.
- There are some crucial differences between them.
- Four arguments against this notion.

I) Opacity inducing operators

- believes, wishes, likely, seeking, must,...
- Indefinite singular exhibits ambiguity:
 - *Harry wishes to talk to a wise wizard.*
 - **transparent reading:** Harry has one particular wizard in mind and wishes to talk to him.
 - $(\text{Esg } x)(\text{wise-wizard}(x) \ \& \ \text{Harry wishes Harry talk to } x)$
 - **opaque reading:** Harry is happy if he is allowed to talk to any wise wizard.
 - $\text{Harry wishes } (\text{Esg } x) (\text{wise-wizard}(x) \ \& \ \text{Harry talk to } x)$

Bare plurals show no ambiguity

- **ØNP** only elicit opaque reading
 - *Harry wishes to talk to wise wizards.*
- This is NOT what we would expect if **ØNP** is the plural counterpart to the indefinite sg.
- Sentences are otherwise identical!
 - phenomenon must be attributed to the bare plural
- The opaque reading has a narrower scope!

II) Scope ambiguity

- May arise in the presence of negation and other quantified NP's.
- *Everyone read a book on linguistics.*
 - Is ambiguous:
 - $(\forall x)(\text{Person}(x) \rightarrow (\exists y)(\text{Book}(y) \ \& \ x \text{ read } y))$
 - $(\exists y)(\forall x)(\text{Book}(x) \ \& \ (\text{Person}(x) \rightarrow \text{read } y))$
- *Everyone read books on linguistics*
 - is not ambiguous:

Narrow scope phenomena

- Indefinite plural shows two readings.
- Bare plural does not elicit ambiguities here
- Only shows narrow scope reading.

III) Differentiated Scope

- Under certain circumstances \emptyset NP's have a ***narrower scope*** than “a” possibly can!
 - e.g. time adverbials, cleft sentences, ...
 - Examples:
 - A dog was everywhere.
 - $(\exists x)(\text{Dog}(x) \ \& \ \text{for all places } y: x \text{ was at } y)$
 - Dogs were everywhere
 -
 - Here the singular and the plural have no reading in common.

Differentiated scope cont.

- This strange behavior sets the bare plural apart from **ALL QUANTIFIERS** and puts it virtually in a class by itself.
-
- Examples:
 - *Wolves get bigger as you go north from here.*
 - But:
 - *A wolf gets bigger as you go north from here*
 - *All wolves get bigger as you go north from here.*
 - *Most wolves get bigger as you go north from here.*
 -
- No other NP works like the bare plural here!

IV) Anaphoric processes

- Anaphora means something like re-uptake
 - something refers back to a mentioned thing
 - *Jim is seeking a unicorn, and Mel is seeking it, too.*
 - Here Jim and Mel must be seeking the same unicorn due to “it”. A reading where they are seeking different unicorns is not possible
 - *Jim ate apples slowly, and Mel ate them fast.*
 - Here it does not mean that both ate the same apples. Why can “them” be used like this here? (note that them = plural of it here)

IV) Anaphoric processes

- It must be the nature of the antecedent, and not the form of the pronoun, which gives rise to this property.
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- Related phenomenon: Reference to the complement set
 - Jim trapped *a beaver* last night, and fed *some others*.
 - ??? Jim trapped *beavers* last night, and fed *some others*.

First summary

- The facts presented so far clearly show that the bare plural cannot be the plural of “a” in any semantically relevant way.
- There is a great deal of semantic overlap between the two, but it is clearly not the case that all the mentioned differences should be attributed to the presence or absence of plurality alone.

2) Generic vs. indefinite plural

- The bare plural seems to have more interpretations and therefore should be systematically ambiguous.
- But the following sentences only show one reading.
 - *Smokers are rude* (\neq *Some smokers are rude*)
 - *Dogs bark* (\neq *Some dogs bark*)
 - *Plumbers stormed into the convention demanding longer lunch breaks* (\neq *most*)

- But in some contexts also ambiguity appears:
 - *Dinosaurs ate kelp* (one event or characteristic)
- BUT: Sentences like these are also ambiguous if there is no bare plural
 - here the ambiguity arises from the predicate
 - so actually they should be interpretable in four ways if **ØNP's** were also ambiguous themselves
- Uses are in complementary distribution.
- Claim: Their distributions are **wholly predictable** from the **context!**

2.1) More Anaphora

- The word *crow* is ambiguous:
 - it either refers to a black bird or a noise
- In an anaphora it is usually not possible that the pronoun refers to another interpretation
 - ??? My rooster lets go with *a crow* when he sees *it* near the house.
- If the bare plural is also ambiguous then two readings of it should not be able to stand in an anaphoric relationship like above
 - Mel traps *lemmings* even though she knows full well that *they* are protected by law.

More Anaphora continued

- We saw an indefinite plural serving as antecedent for a generic use.
- But it also works the other way round:
 - Jeff hates *raccoons* because *they* stole his sweet corn last summer.
 - *Raccoons* have stolen Jeff's sweet corn last summer, therefore he hates *them* a lot.
-
- It is not clear how all this would be possible if the bare plural would be ambiguous.

2.2) Kinds of things

- Strongest argument for unified analysis:
- Contextual factors that give rise to generic and indefinite plural interpretations:
 - are independently motivated and **needed elsewhere** to account for other constructions
 - NP's that refer overtly to kinds of things!
 - NP's denoting kinds have a lot in common with the indefinite plural **ØNP**
- Some properties of NP's like these:

NP's denoting kinds of things

- Only give narrow scope reading
 - *Everyone saw this kind of animal.*
- Only gives rise to opaque reading
- Exhibit differentiated scope
 - *This kind of animal was everywhere*
- With respect to anaphora, NP's denoting kinds pattern like the indefinite plural **ØNP**

NP's denoting kinds of things

- NP's denoting kinds have an existential and a universal interpretation.
 - *Last night, Max shot this kind of animal*
 - *This kind of animal is a vertebrate.*
 - they can be ambiguous as to whether they denote individuals or kinds:
 - *Several birds* were discovered in Osnabrück.
 - *My dog* has been known to attack bears.

NP's denoting kinds of things

- Thus to assume the presence of two independent mechanisms for the same variation would be to miss an obvious generalization!
- → **∅NP** is not represented semantically as an ambiguous determiner.

3) More interpretations?

- So far we did not talk much about the kind reading of the bare plural
- The kind reading occurs in sentences with predicates like widespread, extinct or numerous.
- Bare plurals are fine here:
 - *Plants are widespread / extinct / numerous*
- But individuals are not:
 - *??? John is widespread / extinct / numerous*

Summary

- bare plurals behave like kind NP's
- are distinct from other NP's quantifying over individuals
- Maybe a kind-denoting account is needed.

Towards a unified analysis

- A unified analysis which allows a constant translation of **ΦNP** in all cases
- Important to keep in mind:
 - Bare plural is not the counterpart to a/an
 - It is not the bare plural that decides whether or not a sentence is generic, ambiguous, etc. - it is the rest of the sentence
 - The bare plural has three readings:
 - Kind-, Individual-, and Stage-level

Generic statements about individuals

- Generic statements can also be made of individuals. These statements vary a great deal in truth-conditions. Consider:
 - Kenta mows his neighbour's lawn
 - Kenta beats small children
 - Kenta runs to school
 - Kenta is a drunk

Generic statements about individuals

- We should treat the **Φ NP** in all cases as denoting a **kind of thing**.
- We suppose that the **Φ NP** acts as the proper name of a kind, and that **kinds are to be construed as individuals**.
- Consider this:
 - *Slim* is so-called because of his slender build.
 - *Cardinals* are so-called because of their colour.
 - *??Those / All / Most / No Cardinals* are so-called because of their colour.

Generic statements about individuals

- What is the difference between individuals and kinds?

– *Benke]	are	<i>widespread /numerous /</i>
– *All goats		is	<i>extinct / rare /common...</i>
– Goats			
– This kind of animal			

- What about ambiguity:

- | | | |
|-------------------------------------|---|-----------|
| – “lives in caves” | → | “bats” |
| – “reproduces by giving live birth” | → | “rabbits” |

The indefinite plural

- The indefinite plural interpretation of **Φ NP** must be separated from the other senses of **Φ NP**.
- Why shouldn't it be treated in the same fashion as the generic interpretations?
 - Could this sentence be construed as being true just in case “sitting on my lawn “ is one of the properties of the individual “dogs”
 - “Dogs are sitting on my lawn”

The indefinite plural

- The generic sense seems to speak of tendencies, dispositions, characteristics and the like; the indefinite plural does not have this flavour.
- Sentences with the indefinite plural and sentences with the generic use also have quite different **entailments:**

Indefinite plural:	Dogs are sitting on my lawn. <u>All dogs are mammals.</u> Therefore: Mammals are sitting on my lawn
Generic sense:	Dogs are good pets. <u>All dogs are mammals.</u> Therefore: Mammals are good pets.

Stages, Individuals and Kinds

- (a) Max is being clever
- (b) Max is clever

- (a) says something about Max's current actions
 - The VP also chooses the “existential” reading of the ΦNP , as in “Students are being clever”
- (b) says something about Max's characteristics and is, in a sense, timeless
 - The VP also chooses the “universal” reading of the ΦNP , as in “Students are clever”

Stages, Individuals and Kinds

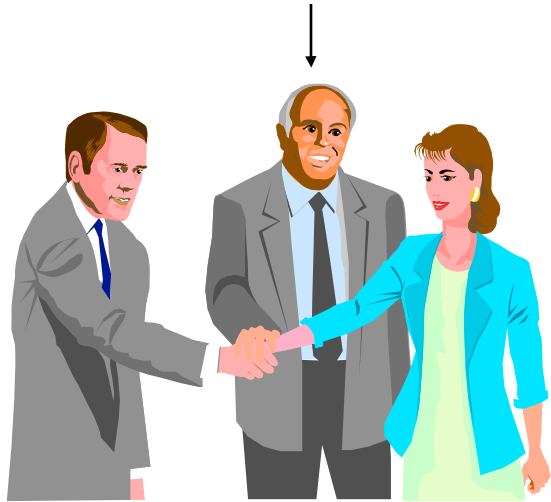
- A similar phenomenon can be found in the English adjectives. Some select the indefinite plural existential reading, and others select the generic
- Two classes can be isolated through fitting them in to these contexts:
 - Jules caught the girls _____ .
 - There were five Dalmatians _____ .
- Into these contexts may only go predicates called “**stages**” (hungry, sleeping, kissing, etc.) as opposed to properties of “individuals” (fat, short, clever, etc.).

Stages, Individuals and Kinds

- **sick = “physical illness” or “mental instability”**
 - Sune caught Svenne sick.
 - Boys are sick.
- In the **first sentence** only the **physically ill** reading is to be found.
- In the **second sentence** the predicate is **ambiguous**, but here the physically ill reading selects the indefinite plural reading of the Φ NP, while the mentally ill reading selects only the generic

What is the difference between stages, individuals and kinds?

Man {*x, y, z, ...*} (kind)



Bruno {*fat, bold, ...*}

{**Stage x:** *shakes hands,*
Stage y: *flirts,* **stage z:** *...*}

- A **Bruno-stage** is whatever realizes Bruno at a time and a place, it is **temporally and spatially bounded**.
- The **individual Bruno** is whatever it is that **ties all the Bruno-stages together** to make them stages of the same thing.

Formalism

- **[[jocke]]** = j
- **[[clever]]** = $\lambda x \in D_e . X$ is clever
- **[[clever]]** = $\lambda x \in D_e . \exists y \in D_{\langle \text{stages} \rangle} . [R(y, x) \ \& \ \text{clever}(y)]$
- The predicate “R” may be thought of as “realizes”. The stages then may be called “realizations” of an individual.

Formalism

- indefinite plural interpretation -

- **[[dogs]]** = d just like Jocke!!!
- **[[run]]** = $\lambda x \in D_e . X$ runs
- **[[is running]]** =
 $\lambda x \in D_e . \exists y \in D_{\langle \text{stages} \rangle} . [R(y, x) \ \& \ \text{is running}(y)]$
- This shows that kinds and names look the same, since bare plurals are to be treated as proper names of a kind.
- A kind is to be thought of as whatever it is that ties a bunch of things of that kind together, making them realizations of the same thing.

Formalism - narrow scope -

- The bare plural always has the “narrowest” scope.
- *“Cats are here and cats are not here”* has only the contradictory reading. And since we treat the bare plural as a **proper name of a kind** this sentence is a contradiction for the same reason that a sentence like “Bertil is here and Bertil is not here” is a contradiction.

Formalism - narrow scope -

- We can also compare individuals and kinds like this:
 - **[[jocke]]** = j
 - **[[dogs]]** = d
 - **[[some dogs]]** = $\lambda g \in D_{\langle et \rangle}$. there is some $x \in D_e$ such that x is a dog and g(x) are both true
 - **[[be everywhere]]** = $\lambda x \in D_e$. $\forall y \in D_e$ [y is a location $\rightarrow \exists z[R(z, x) \ \& \ z$ is in the location y]

Formalism - narrow scope -

- **[[be everywhere]]** = $\lambda x \in D_e . \forall y \in D_e [y \text{ is a location} \rightarrow \exists z [R(z, x) \ \& \ z \text{ is in the location } y]]$
- **“some dogs are everywhere”**
 - There is some x such that x is a dog . $\forall y \in D_e [y \text{ is a location} \rightarrow \exists z [R(z, x) \ \& \ z \text{ is in the location } y]]$
- **“dogs are everywhere”**
 - $\forall y \in D_e$ such that y is a location there is a x such that x is a dog $\rightarrow \exists z [R(z, x) \ \& \ z \text{ is in the location } y]$

Conclusion

- Bare plural is not the counterpart to a/an
- The bare plural has three readings
 - Kind
 - Individual
 - Stage
- These arise because of three kinds of predicates:
 - Kind predicates (widespread)
 - Individual predicates (intelligent)
 - Stage predicates (tired)
- It is not the bare plural that decides whether or not a sentence is generic, ambiguous, etc. - it is the rest of the sentence!
- Bare plurals always name kinds.

Reference

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“A Unified Analysis of the English Bare
Plural”