On Certain / Specific phenomena

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1 Goals of the talk

- A look at the status of the "singleton-indefinite" analysis of specificity.
- Some remarks on why certain plural indefinites have no/only "specific" readings.

Assumptions:
• Indefinites have readings which appear to take wide scope w.r.t. other operators, even past syntactic islands ("*Exceptional Wide Scope*", **EWS**).

(1) a. If *some building in Washington* is attacked by terrorists, US security will be in danger. $\surd\,\exists > IF$
b. There is a building in Washington an attack of which may put US security in danger. *preferred interpretation*

(2) a. When *two relatives of mine* die, I will inherit a fortune. $\surd\,\exists > WHEN$
b. There are two relatives of mine whose death will make me rich. *preferred interpretation*

• Intermediate scope is possible (*pace* Fodor and Sag 1982)

(3) a. Every good linguist studies every solution that *some problem* might have. $\surd\,\forall L > \exists P > \forall S$
b. Every good student reads every poem written by *some author*. $\forall S > \exists A > \forall P$

2 Previous solutions

The problem: to account for EWS without being forced to different scope mechanisms for different Ds.

Original proposal: (Fodor and Sag 1982): indefinites are ambiguous between a quantificational, and an entity-denoting reading ⇒ the EWS follows the pattern of e.g. proper names.

Problems: No account for intermediate scope, as in (3). Difficulty to account for island-bound distributivity (see (6a))

Reinhart (1997), Winter (1997): the various scope possibilities can be captured by assuming that indefinites denote **choice functions** (CF), which can be bound by existential closure at various structural levels.

(4) a. $\exists f[\mathrm{CF}(f) \wedge \mathbf{attacked'}(f(\mathbf{building\_in\_Washington})) \rightarrow \mathbf{danger}(\mathbf{security})]$ *wide scope*
b. $[\exists f[\mathrm{CF}(f) \wedge \mathbf{attacked'}(f(\mathbf{building\_in\_Washington}))]] \rightarrow \mathbf{danger}(\mathbf{security})$ *narrow scope*

Intermediate scope is possible:

(5) $\forall \mathrm{x}[\mathbf{good\_student'}(\mathrm{x}) \rightarrow \exists f[\mathrm{CF}(f) \wedge \forall \mathrm{y}[\mathbf{poem'}(\mathrm{y}) \wedge \mathbf{written\_by'}(\mathrm{y},f(\mathbf{autor'}))] \rightarrow \mathbf{read'}(\mathrm{x,y})]]$ (3b)

The CF account, where indefinites don't really scope out of islands, makes the right predictions with *distributivity*, which is island-bound even when applied to specific plural indefinites (Ruys 1992, Winter 2001):

(6) a. #If [three women gave birth to John] than he has a nice mother Winter 2001:95
b. "There are three specific women such that, for each of them, if John was her son, he has a nice mother" *sensible but impossible specific reading*

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c. "There are three specific women such that if John was the son of each of them, he has a nice mother." *crazy but possible specific reading*

d. *If John had 3 mothers, he has a nice mother. *crazy non specific reading*

(7) $\exists f[\mathrm{CF}(f) \wedge [\forall y[y \in f([\![\text{three women}]\!]) \wedge \mathbf{mother'}(y,\mathbf{john})] \rightarrow \mathbf{nice\_mother'}(\mathbf{john})]]$ *indefinite WS, distributivity NS*

Problems with the CF account:

1. Unlike "standard" Quantifier Raising (modeled after WH-movement), the wide-scoped existential over CFs has no overt linguistic correspondent (e.g. a scope marker for the position of the existential).

2. It is very difficult to establish a link between the scope of the existential over the CF and the syntactic shape of the indefinite. Yet, this link exists.

On the first point, contrast the CF proposal and the existential closure of bare plurals with stage/individual-level predicates:

(8) a. Violinists were available. = *There were violinists available*

b. Violinists were skilled. $\neq$ *There were skilled violinists*

Diesing (1992): in (8b), due to the presence of an I-level predicates, the subject is outside VP, in a position which cannot be bound by $\exists$. The only binder is the generic operator (**Gn**). But even in this position, specific readings are fine:

(9) a. Violinists that could perform *a well-known piece by Paganini* were skilled.

b. $\exists f[\mathrm{CF}(f) \wedge \mathbf{Gn}(y)[[\mathbf{violinist'}(y) \wedge \mathbf{perform'}(y,f(\mathbf{well\_know\_piece\_by\_Paganini}))] \rightarrow \mathbf{skilled'}(y)]]$

Why can $\exists$ bind the CF at sentence-level, if it cannot bind *violinists*?

On the second point: some indefinites (in particular bare plurals, vague and complex numerals) cannot take wide scope (Liu 1990, Beghelli 1995, Zamparelli 1995, Winter 2001)

(10) If { $\emptyset$ / exactly 3 / at least 4 / few / many} relatives of mine die, I will inherit a fortune. *only* if $> \exists$

Vice-versa, modifiers like *certain/specific/particular* ("Specificity Markers") strongly favour a wide-scope reading.

(11) Mary is looking for a certain/specific/particular unicorn.

(Winter 2001): only certain overt indefinite articles can be translated as CFs (simple numerals, *a*, *some*).

A difference between the scope of indefinites and that of other quantifiers: the role of restrictions.

(12) a. A dog followed [every person]. $\forall >$*a*, *a*$> \forall$

b. If you meet [a person ??(with ... / that ...)], let me know. *with a* $>$ *if*

$\Rightarrow$ the scope of *every* in (12a) can easily flip-flop around *a*, but to give *a person* wide scope in (12b) additional material in the restriction is virtually necessary.

(13) *The scope of indefinites is restrictor-driven.*

3 The Singleton Indefinite approach

Schwarzschild (2002) defends an approach in line with (13): Indefinites introduce normally-scoped $\exists$; the impression of WS comes from the restrictions, which may end up denoting a *singleton property*. In this case, $\exists$ always ends up picking the same individual, regardless of its scopal level.

(14) (1) If *some building in Washington* is attacked by terrorists, US security will be in danger.

a. $[\exists x\ [\textbf{building\_in\_Washington}'(x) \wedge \textbf{attacked}'(x)] \rightarrow \textbf{danger}(\textbf{security})]$ *if* $[\![$building in W.$]\!] = \{\mathbf{w}\}$, *equivalent to:*

b. $\exists x\ [\textbf{building\_in\_Washington}'(x) \wedge [\textbf{attacked}'(x) \rightarrow \textbf{danger}(\textbf{security})]]$ *wide scope*

- This account requires that indefinite restrictions may be partly *implicit* (see Stanley and Gendler-Szabo 2000)

(15) Every farmer remembers at least one year when every crop (*of that year, by that farmer*) failed.

- In cases of intermediate scope, it is necessary to assume that the (implicit) restriction remains a singleton *relative to* the value assigned to any bound variable in the restrictor by an external quantifier.

(16) Every good linguist X studies every conceivable solution that some problem (*of interest to* X) might have.

- Unlike with the restriction of definites, there is no presupposition that the *hearer* knows how to complete the restriction and arrive at a singleton set.

With this approach in mind, consider the two original issues:

• Why indefinites with complex/vague numerals cannot take wide scope.
• How do specificity markers work?

General Idea: Specificity markers help to create, or presuppose, singleton-property status. Complex numerals force the restriction not to be a singleton.

4 Differences between specificity markers

There are clear syntactic and semantic differences between *certain* and the *specific/particular*

(17) I heard it from ... *Uniqueness*
a. a certain Italian guy that I met yesterday in the elevator
b. a specific Italian guy that I met yesterday in the elevator *presupposes that I met more then 1*

(18) I heard it from a certain / ??specific George Bush.

(19) a. She looked at me with a certain / ?specific / ?particular hesitation. *"Degree of"*
b. The plane took a certain / ?specific / ?particular speed on the runaway.

(20) a. Certain specific needs *Order*
b. *Specific certain needs

In Italian, only *certo* "certain" cannot appear in post-N position (with the same meaning as pre-N *certo*)

(21) Una ({certa / specifica}) precauzione ({*certa / specifica})

Certe N_{plur} has the distribution of a full DP *specifiche/particolari* N_{Plur}, of a bare plural:

(22) a. Certe idee sono eccellenti.
certain ideas are excellent.
b. ??Specifiche/particolari idee sono eccellenti.
specific/particular ideas are excellent.

(23) **Syntactic conclusions:**
a. *certain* can be (part of) a determiner, or a non restrictive modifier.
b. *specific/particular* are restrictive adjectives.
c. *certain* is inserted in a higher DP position than *specific/particular* (possible [Spec,DP]), where it can modify proper names.

4.1 A semantics for specificity markers

"A particular N" = "an N which has at least one property that distinguishes it from any other N"

⟦particular NP⟧ = the (proper) subset of ⟦NP⟧ containing those elements in the NP denotation which have some property (probably, among a contextually relevant set) that no other element in the NP denotation has.

(24) $[\![\text{particular}]\!]_{<<et><et>>} = \lambda Q\ \lambda x\ \exists P[P(x) \wedge \forall y[y \in Q \wedge y \neq x \rightarrow \neg P(y)]]$

⟦particular NP⟧ is typically not a singleton property, but the adjective 'catalizes' their formation:

(25) $\forall P \subseteq [\![\text{particular NP}_{sing}]\!] \exists Q[Q \bigcap [\![\text{particular NP}_{sing}]\!] = P]]$ *Q among a contextually relevant set*

Crucially, (24) guarantees that any element in ⟦particular NP⟧ can be turned into singleton property by intersecting ⟦particular NP⟧ with some implicit restriction. For instance:

(26) a. given ⟦NP⟧ = {**a,b,c,d**}, P1 = {**a,b,f**}, P2 = {**c,g**}, P3 = {**d,h**}
b. ⟦particular NP⟧ = {**c,d**} **a,b** *are not in the result because there is no way to obtain the sing.props* {a},{b}

Where specificity markers fail:

(27) The bucket can hold three (* particular/specific) liters.

On the origin of properties that allow something to be specific, consider:

(28) a. Mary is looking for gloves, but she isn't looking for particular/specific gloves.
b. #Mary found gloves, but she didn't find particular/specific gloves.

To the extent *specific gloves* cannot take WS ("there are specific gloves that she didn't find"), the sentence seems contradictory: there is a property P, the property of being found by her, which uniquely distinguishes those from other gloves. Note that *specific gloves* is a bare plural. Other cases:

(29) a. If I had been given specific instructions, I would try to carry them out.
b. Every law student had to memorize every case that was discussed in specific pages of the code.

(in (29b), "specific pages" could be a dependent plural: 1 specific page per student).

Unlike *specific/particular, certain* is not an intersective adjective (see (18), (17a)), but part of a complex determiner.

(30) **Proposal:**
a. *A certain* NP presupposes that ⟦NP⟧ (plus implicit restrictions) reduces to a singleton property
b. The difference with *the* is in the lack of presuppositions that the nature of the implicit restrictions be recoverable for the hearer ⇒ no familiarity.

Other differences (see (19)) follow the assumption that, from its position, *certain*, unlike *specific/particular*, can apply to an implicit AMOUNT modifier (see Kayne 2002)

(31) ... a certain AMOUNT OF speed/hesitation (cf. (19))

(all markers of specificity can modify an implicit KIND modifier: see "every man loves a certain/particular/specific KIND OF woman: his mother")

5 Non specific indefinites

Assumptions: Plural NPs denote the power set of the corresponding singular NP denotation, minus the empty set (see e.g. Landman 1989,Schwarzschild 1996). Simple numerals are (intersective) modifiers of pluralities (see e.g.

Verkuyl 1981, Hoeksema 1983)

In the singleton property approach, ‘specific’ plural indefinites should be obtained with a restriction that contains a single plural individual. The problem is how to filter out the *subsets* of this plural individual.

5.1 Bare plurals, simple numerals

Null Hypothesis: *people I saw yesterday* denotes the maximal set of people I saw yesterday (say **a,b,c**), plus all its subsets. Therefore, in e.g. (33) the existential may pick different (plural) individuals ⇒ EWS possible only insofar (32) can be implicitely restricted to {{**abc**}}.

(32) ⟦people I saw yesterday⟧ = {{**abc**}, {**ab**}, {**bc**}, {**ac**}, {**a**}, {**b**}, {**c**}}

(33) Every friend who spoke to *people I saw yesterday* found them nice.

With simple cardinal numerals, singleton properties obtain if the numeral is equal to the cardinality of the singular restriction. ⇒ easy EWS of plural indefinites with simple cardinals.

(34) ⟦3 [people I met yesterday]⟧ = {{**abc**}}

5.2 Complex/vague numerals

(35) COMPLEX NUMERALS = *exactly 3, at least/most 4, just 3, about 4, more than 1, 1 or more, ...*
VAGUE NUMERALS = *many, few, several, a few (?), much, too many/much, ...*

Common property: syntactically complex (Zamparelli 1995). Two main routes for an analysis:

• **Complex numerals are quantifiers**
(Winter 2001): complex/vague numerals do not denote CFs, but generalized quantifiers over sets of atomic individuals.
• **Pro:**
Just as with normal universals, no EWS is expected. Quantifier-like behaviour with group nominal predications (Winter 2001,ch.5).

(36) {11 / *most / *exactly 11} students are the team that won the cup.

• **Contra:**
Diverging behaviour with existential sentences and predicate nominals:

(37) There are {*most / exactly 11} unicorns.

(38) Those are {*most / ?many / exactly 453} nails.

Worse, no explanatory connection between “being a GQ” and “being syntactically complex”.

• **Complex/vague numerals are modifiers**
(Krifka 1999, Landman 2000): The lack of EWS is due to a non-singleton denotation:

(39) {at least 3 / less than 3 / between 3 and 3} people I met yesterday.

The hard case remains *exactly* N: *exactly* N NP_{plur} could not give a singleton only when $|\text{NP}_{sing}| > \text{N}$. Potentially possible pragmatic proposal: [*exactly* N NP] disfavoured over [N NP] when $|\text{NP}_{sing}| = \text{N}$.

(40) a. ?Exactly two of my hands / parents.
b. ?Exactly five of my five dogs barked.

6 Appendix: Chierchia's criticism

Chierchia (2001) against Kratzer (1998) (and thus Schwarzschild 2002): the implicit context-dependent restriction doesn't work in downward entailing contexts.

(41) Not every student read every poem by some author.

Context 1: Systematic students
A reads every poem Frost
B reads every poem by Dickinson
C reads every poem by Platt

Context 2: Unsystematic students
A reads every poem Frost
B reads every poem by Dickinson
C reads no poem.

(41) should be false in Context 1 and true in Context 2.

(42) $\neg\forall x[\textbf{student}'(x) \rightarrow \forall y[[\textbf{poem}'(y) \wedge \exists k\ \textbf{author(+property\_P)}'(k) \wedge \textbf{written\_by}'(y,k)] \rightarrow \textbf{read}'(x,y)]]]$ (3b)

What is P? Three possibilities:

(43) a. P = "be an author unknown to *x*" ⇒ True in Context 2 but also in Context 2.
b. P = "be an author whose poems have all been read by *x*" ⇒ False in Context 1 but also in Context 2 (since the restriction in the antecent of the internal universal is empty)
c. P = "be an author whose poems have been assigned to/should have been read by *x*" ⇒ False in 1, True in 2.

Moral: restrictions must be filled in ways which discriminate as much as possible between different thruth-affecting scenarios.

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