

Covert Quantifier Restrictions in Natural Languages

Angelika Kratzer, UMass Amherst

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The Bigger Question

- How does context affect semantic content?
- The case discussed here: Implicit quantifier restrictions.

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From a bathroom in York

“Please do not dispose of anything down the toilet, except toilet paper.”

- I was truly puzzled by this note, but eventually figured out that there was an implicit restriction for *anything*.

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Pedantry or Lunacy?

A: Everybody is frowning.

B: My mother in Mindelheim isn't.

A: I was only talking about everybody in this room, of course.

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Covert domain restriction variables?

A: Everybody_c is frowning.

B: My mother in Mindelheim isn't.

- B filled in an obviously unintended value for the domain restriction variable.

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Execution of the domain variable idea

- Westerståhl 1984, von Stechow 1994, Martí 2003: Quantifiers come with unpronounced domain restriction variables ranging over properties of individuals.

- $[[\text{every}_c]]^g = \lambda P \lambda Q \lambda w \forall x [[g(C)(x)(w) \ \& \ P(x)(w)] \rightarrow Q(x)(w)]$

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Refinement

- (1) Every girl finished every task (she was supposed to do).
- Implicit domain restrictions are more complex. They consist of functional variables and appropriate argument variables: von Stechow 1994.

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Where is the variable?

- Domain restriction variables do not come with quantifiers, but with common nouns. Stanley & Szabo 2000, Stanley 2002.

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Support for nominal restriction

- Superlatives (Delia Graff p.c. to Stanley 2002)
- (1) Vanessa climbed the highest mountain_C.
- ↑
in New Hampshire

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But there are some new puzzles now

- If determiner quantifiers are implicitly restricted via variables that come with their common nouns, where do implicit restrictions for adverbial quantifiers come from?
- Martí 2003.

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Breheny Examples

- Every fake philosopher_C is from Idaho.
- ↑
American

Not: Every fake American philosopher is from Idaho. Take a genuine European philosopher who pretends to be American.

- Breheny 2003.

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An unanswered syntactic question

- Are there natural languages with overt domain restriction variables? If not, what is it that forces those domain restriction variables to be covert?

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Looking at the semantics

- How do contexts provide values for the assumed domain restriction variables?

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Finding values for the variables

Me: Everybody_C is smiling.

- Why is my utterance most readily understood as talking about everybody in this room?
- What if there are salient properties of subgroups present in this room?

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A salient group of smilers

- Me: Everybody_C is smiling.



- What I said is still likely to be judged false.

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Observation

- Even very salient properties of individuals are not readily picked up as values for domain restriction variables.

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Worse things to come

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Definitely not pedantry!

- A: Lisa is a **phonologist**. I think that most linguists_C would agree with what she said.
- B: I don't think any syntactician or semanticist would.
- A: I was only talking about phonologists, of course.

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Hard to explain...

- Lisa is a **phonologist**. I think that most linguists_C would agree with what she said.
- *Phonologist* is of the right semantic type, it is the closest possible antecedent, it is salient, and pragmatically very plausible. Yet it is not a possible antecedent for C.

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Contrast: Overt anaphora

- A: Lisa is a phonologist. I think that most **such** linguists would agree with what she said.
- B: # I don't think any syntactician or semanticist would.

Chris Potts p. c.

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Another mystery

- (1) A man called who had climbed Monte Disgrazia, and a woman did, too.
 - (2) A man called who had climbed Monte Disgrazia. A woman called, too.
- (1) is much more readily understood as entailing that a woman who had climbed Monte Disgrazia called. Why?

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Summary

Three unanswered questions about domain variables

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Problem one: Location

- The variable comes with determiners: Problems with superlatives.
- The variable comes with nouns: Problems with adverbial quantifiers, adjectives like *fake* or *alleged*.

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Problems two & three

- Why should domain variables have to be covert in every natural language? Distribution of overt and covert property anaphora?
- Why are domain variables so unwilling to pick up most kinds of contextually provided properties of individuals?

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A different route...

- Are there independently needed devices that might covertly restrict quantification domains for both nominal and verbal quantification?

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Yes!

- Situations - partial worlds, that is.
- Barwise & Perry 1983. Barwise & Etchemendy 1987. Kratzer 1989. Heim 1990. Poesio 1993. Cooper 1996. Recanati 1996. Elbourne 2002.

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An Austinian Account of Covert Quantifier Restrictions

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The initial example

Me: Everybody is frowning.

- Why is my utterance most readily understood as talking about everybody in this room, here at Harvard University?

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An Austinian answer

- My utterance is about a particular actual situation, a mere part of the actual world.
- What I am claiming is that everybody in the situation we are talking about - **the topic situation** - is frowning.
- Barwise & Etchemendy 1987. Recanati 1996.

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The same account for adverbial quantifiers

- (1) This concert was performed exactly twice.
- (1), too, can be understood as a claim about a mere part of the actual world.

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A claim about America

- Every fake philosopher is from Idaho.
Not: Every fake American philosopher is from Idaho.
- Breheny 2003.

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Expectation

- Unless there is true ellipsis, salient subsituations, not salient properties, should guide the availability of covert quantifier domain restrictions.

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Everybody is frowning

- The present tense tells us that the topic situation is a current situation.
- If there isn't any other topical current situation, the utterance situation is the obvious fallback.

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Past topic situations

- (1) Since it had snowed during the night, **everyone** shoveled their driveway.
- A felicitous utterance of (1) does not merely require a salient topic or reference time.

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Claims about a particular situation

- (1) A man called who had climbed Monte Disgrazia. A woman called, too.
- We expect no pressure for the two common nouns to share restricting properties.

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Contrast with VP-ellipsis

- (1) A man called who had climbed Monte Disgrazia, and a woman did, too.
- In the second conjunct of (1), the relative clause is copied in the process of reconstructing the elided VP.

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Claims about the actual world

Lisa is a phonologist. I think that most linguists would agree with what she said.

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Changing Aspect

- (1) A harbor seal in California died last week.
Most pups die in the first few weeks of life.
 - Gawron 1996.

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Zooming in

- (1) Juan drove up to the busy tollbooths.
The tolltaker was rude.
- (2) Juan looked at the busy tollbooths.
The tolltaker was rude.
 - William Evans 2004.

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Summary

- Topic situations seem to be responsible for many instances of covert quantifier restrictions.
- Tense and aspect help pick topic situations: Generic versus episodic aspect; present versus past.

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Topic situations instead of topic times

- It seems that topic situations should take the place of topic or reference times in the semantics of tense and aspect.

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Tense & Aspect

- Tense: Expresses a relation between utterance situation and topic situation.
- (Viewpoint) aspect: Expresses a relation between topic situation and described situation.
- Klein 1994; but Klein has times instead of situations.

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Question

- If implicit quantifier restrictions were delivered via covert domain variables, why would tense and aspect affect the choice of domains in the way they do?

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The place of situations in semantics

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Situations in Semantics

- What is the exact place of situations in natural language semantics?
- E. g. evaluation parameters, covert arguments of predicates, resource situations, ...

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Cresswell 1990

- Natural languages have the expressive power of explicit (that is, object-language) quantification over worlds and times.
- Cresswell's arguments are extendable to situations.

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Keeping track of situation parameters ...

- If whenever it snowed, the local weather channel had reported that it hadn't snowed as much as it actually did, somebody would have complained immediately.

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- If whenever it **snowed**, the local weather channel had reported that it hadn't snowed as much as it **actually did**, somebody would have complained immediately.
- We start with a set of actual snowing situations. Each snowing situation is matched with a set of reporting situations in counterfactual worlds. Each reporting situation is matched with a set of worlds that are compatible with the content of the report.

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How many eventually...?

- Whenever it snowed anywhere around here, some local person dreamed that it snowed more than it actually did, and that the local weather channel erroneously reported that it had snowed less, but still more than it snowed in reality.

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Representing situations

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Percus 2000

- Situations enter the semantics as situation arguments of lexical predicates.
- Parallel with Gallin's intensional semantics: all predicates have world arguments.

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Situation arguments with verbs and nouns:

- Every person *in s* is frowning *in s*.

↓
within NP

↓
'Topic situation variable.
Within extended verbal projection.

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Regular argument saturation

- Situation arguments introduced by nouns are saturated within (extended) nominal projections.
- Situation arguments introduced by verbs are saturated within (extended) verbal projections: Topic situations.

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Not necessarily the same

- Enç 1981, Musan 1995, Percus 2000.
 - The winner_s (yesterday) lost_s (today).
 - The loser_s (yesterday) won_s (today).

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Consequence for Domain Restriction

- We expect implicit domain restrictions to come in via nouns **AND** via the topic situation.
- ☞ Stanley & Szabo's arguments for nominal restriction. Martí's concerns about adverbial quantifiers. Breheny examples.

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Situations in quantifier constructions

- Everyone finished every job.
 $\lambda s \forall x [\text{person}(x)(s) \rightarrow \exists s' [s' \leq s \ \& \ M(s') = x \ \& \ \forall y [\text{job}(y)(s') \rightarrow \text{finished}(y)(x)(s')]]]]$
- A **Matching Function** in the sense of Rothstein 1995 is routinely introduced in the nuclear scope of distributive quantifiers.

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Rothstein's Matching Functions are needed anyway

- Whenever I exercised, I slept badly.
- There have to be at least as many bad sleeps as events of exercising.

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Mitchell-Partee examples

- The leader of the **local** union wrote a letter to **every untenured professor** in the state.

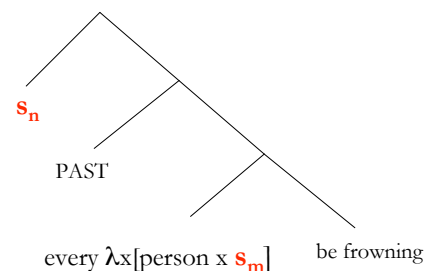
Every untenured professor received a letter from the leader of the **local** union.
- Partee 1989.

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Representing Austinian Assertions via Tense

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Austinian assertion in a tree



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Past Tense

[[PAST]]^c =

$\lambda p \lambda s [p(s) \ \& \ \text{before}(f_{\text{time}}(c))(f_{\text{time}}(s))]$

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Lexical entries

- [[every]]^c =
 $\lambda P_{\langle et \rangle} \lambda Q_{\langle e \langle st \rangle \rangle} \lambda s \forall x [P(x) \rightarrow \exists s' [s' \leq s \ \& \ M(s') = x \ \& \ Q(x)(s')]]$
- [[person]]^c = $\lambda x \lambda s \text{ person}(x)(s)$
- [[be frowning]]^c = $\lambda x \lambda s \text{ frowning}(x)(s)$

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Pronounced Situation Variables!

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Where?

- Cases I know of: Informal registers of South German dialects.
- Other German dialects?
- Other languages? Possibly Somali.
Lecarme 2004.

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What do they sound like?

- *Da* and *na*. *Na* cannot realize situation arguments of nouns, though.
- In my dialect, I would use *da* in all cases where *na* is used in the attested Bavarian examples I found.

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Source of examples

- Karl Valentin & Liesl Karlstadt.
Recorded by the Bayerische Rundfunk between 1928 and 1947.

CD: Semmelknödel und andere Sprachclownerien. Der Hörverlag. München 2003. My transcription.

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Topic situation pronouns

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Biker and policeman

Da is gestern früh, zum Beispiel, da is
da is yesterday morning, for example, da is

a recht a starka Sturmwind gegangen, da
a real a strong storm wind blown, da

hab' I meine Steine nicht dabei g'habt.
have I my rocks not with me had.

Radfahrer und Verkehrsschutzmann.

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In the zoo

Da zahlt man eine Mark Eintritt.
Da pays one one Mark entrance

Und da sieht man einen ganz gewöhnlichen
And da sees one a very ordinary

Spatzen.
sparrow

Im Zoologischen Garten

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The roast rabbit

Was riecht denn da so komisch?
What smells particle da so strange

What's the strange smell here?

Da brandelt was.
Da burns something

Something is burning.

Der Hasenbraten

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Biker and policeman

Wenn Sie keinen Strom dazu brauchen
If you no electricity for it need

da kann doch die Lampe nicht brennen.
da can particle the lamp not burn

If you don't need any electricity for it, in that case the
lamp can't shine.

Radfahrer und Verkehrsschutzmann

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The duck dream

Wenn I dia den Wuam wirkli fress'n hätt lass'n
If I to you the worm really eat had let

na war der jetzt hechstens recht schlecht.
na would to you now at most very sick

If I had really let you eat the worm, in that case you
would be at best quite sick.

Der Ententraum

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NP-internal situation pronouns

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In the zoo

Wirst doch net streiten wegen den zwei
you+will particle not fight because of the two

Billietten da.

tickets da.

Im Zoologischen Garten

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In the zoo

Des wean sich saudumm anhör'n wenn
That would refl. real stupid sound if

... die Wölfe da zwitschern würden.
the wolves da chirp would

That would really sound stupid if the wolves da
chirped.

Im Zoologischen Garten

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Conclusions

- Situation arguments, rather than covert domain variables, seem to be largely responsible for implicit quantifier restrictions that are not due to ellipsis.
- Situation arguments are independently needed to account for a wide range of phenomena, and have moreover overt counterparts in some languages.

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Broader Implications

- The facts discussed in this paper are compatible with the view that non-linguistic context affects content via syntactically represented variables.
- I have only argued against positing a special breed of domain variables.

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