Quantifier domain restriction

Kai von Fintel

April 4, 2014

Ernie's charge

"I think it would be great if we could open with you and you simply run a workshop for a few hours introducing people to issues about quantifier domain restriction."

20 years ago

Kai von Fintel. 1994. *Restrictions on quantifier domains.* Amherst, MA:
University of Massachusetts PhD thesis.

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Kai von Fintel. 1994. *Restrictions on quantifier domains*. Amherst, MA: University of Massachusetts PhD thesis.

I'm old.

Why it's good that Craige is here

Roberts, Craige. 1995. Domain restriction in dynamic semantics. In Emmon Bach, Eloise Jelinek, Angelika Kratzer & Barbara H. Partee (eds.), *Quantification in natural languages* (Studies in Linguistics and Philosophy (SLAP) 54), 661–700. Dordrecht: Kluwer.

Why it's good that Zoltán is here

Jason Stanley & Zoltán Gendler Szabó. 2000. On quantifier domain restriction. *Mind and Language* 15(2/3). 219–261.

Some (but not all) relevant literature

- Westerståhl 1984
- von Fintel 1994, 1998, 1999
- Roberts 1995
- Stanley & Szabó 2000
- Matthewson 2001
- Stanley 2002
- Martí 2003
- Breheny 2003
- Percus 2004
- Kratzer 2004, 2011
- Schwarz 2009, 2012
- Elbourne 2013

Thus spake Lewis

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Nevins, Pesetsky & Rodrigues 2009

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apropos a claim by Everett that a certain item in Pirahã isn't a true quantifier since it doesn't quantify over everything

Everybody

(1) *The workshop was a complete success.*
Everybody had a grand time.

Other "idioms of quantification"

(2) John has to be in his office.   modals

(3) Kai rarely eats with chopsticks.   adverbs of quantification

(4) Ernie knows that dinner will be late.   attitudes

(5) My son's snowman is tall.   adjectives

(6) *What did you do last night?* Oh, I only watched the X-Files.   only

…

Plot

1. Domain variables
2. Situation variables
3. Domain widening

Radical pragmatics

When *S* says *everybody had a grand time*, the proposition *expressed* is the obviously false one that everybody in the entire world had a grand time.

H will figure out that the proposition *meant* is that everybody at the workshop had a grand time.

Real life

One recent example of this kind of approach, plus a critique and a reply:

- David Braun. 2012. An invariantist theory of 'might' might be right. *Linguistics and Philosophy* 35(6). 461–489.

- Igor Yanovich. 2013. Invariantist 'might' and modal meaning change. *Linguistics and Philosophy* 36(2). 175–180.

- David Braun. 2013. Invariantism about 'can' and 'may' (as well as 'might'). *Linguistics and Philosophy* 36(2). 181–185.

Problem

(7) *The workshop was a complete success.*
  Everybody in the entire world had a grand time.

Why doesn't *H* figure out what was meant by uttering the obviously false claim that everybody in the world had a grand time?

(8) You never ever take out the garbage!

Locating the restriction

How does *Everybody had a grand time* get to express that everybody at the workshop had a grand time?

Big decision

Is the restriction effected by material in the LF or via a parameter of interpretation?

If in LF, then what and where?

- syntactic ellipsis
- silent anaphor
  - types:
    - type $\langle e, t \rangle$ – a set
    - type $\langle s, et \rangle$ – a property
    - type $\langle set, set \rangle$ – a subset selection function, variant: choice function
    - type s (situation argument)
  - location:
    - sister of nominal argument
    - sister of determiner

Locality

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C_1: everybody at the workshop
C_2: everybody invited to the workshop

More examples on locality

(11) *Sweden is a funny place. Every tennis player looks like Björn Borg, and more men than women watch tennis on TV.*
But most people really dislike foreign tennis players.   Westerståhl

(12) The pig is grunting, but the pig with floppy ears is not grunting.
                                                              Lewis

(13) Yesterday the dog got into a fight with a dog. The dogs were snarling at each other for half an hour, I'll have to see to it that the dog doesn't get near that dog again.   McCawley

(14) Everybody is asleep and is being monitored by a research assistant.
                                                              Soames

Bindability

(15) Only one talk was so exciting that no listener fell asleep.

<div align="right">after Heim</div>

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(16) Only one talk $\lambda x.$ x was so exciting that no$_{C(x)}$ listener fell asleep.

Bindability

(15) Only one talk was so exciting that no listener fell asleep.

<div style="text-align: right;">after Heim</div>

(16) Only one talk $\lambda x.$ *x* was so exciting that no$_{C(x)}$ listener fell asleep.

C: a function from talks to attendees

More examples on bindability

(17) Whenever we have a party, everybody brings something. Cresswell

(18) Every girl finished every task. Kratzer

…

Intensionality

von Fintel 1998:

(19) When John went to Prague, he studied some Czech beforehand. It was quite possible that nobody would speak Welsh.

Stanley & Szabó 2000:

(20) If there were a few more bottles on the shelf, John would not have purchased every bottle.

Location of the restriction: D or N?

- von Fintel 1994: C is an argument of the quantifier
- Stanley & Szabó 2000, Stanley 2002: C is a sister of the noun

Anaphora

(21) *We're talking about a certain village*
Most people regularly scream. They are crazy.

Reading 1: the people in the village are crazy
Reading 2: the people in the village who scream are crazy

Assumption: "Ideally, one would wish to say that cross-sentential anaphora of this sort requires antecedents that are constituents (nodes) of a preceding logical form."

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Response: that's a rather old-fashioned syntax-centric conception of anaphora, which more plausibly should be governed by salience

Superlatives

(22) *We're talking about life at Cornell*
     The tallest person is nice.
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Response: since *-est* is a quantifier, it carries its own *C* variable, which can effect the restriction to Cornell individuals

cf. Heim 1999, Gajewski 2010

A distinction between adjectives

Subsective adjectives:

(23) *Talking about a dinner party vs. talking about a formal concert*
Smith is a remarkable violinist.
= Smith is remarkable as a violinist compared to other dinner party/formal concert violinists.

Privative adjectives:

(24) *Talking about American academia*
Every fake philosopher is from Idaho.   after Breheny
$\neq$ every fake (American philosopher) is from Idaho

Which determiners can be restricted?

There are determiners that don't seem to be hospitable to domain restriction. Relevant data in Cooper 1996, Matthewson 2001, Schwarz 2012.

(25) *Last night I threw a party and a bunch of linguists and philosophers came.*
      #All/most linguists got drunk.

(26) *There were 100 linguists and 100 philosophers at the party. We asked everyone, and we found out that …*
Every linguist went to New Zealand for Christmas last year.
All/most of the linguists went to New Zealand for Christmas last year.
#All/most linguists went to New Zealand for Christmas last year.

Earlier data

Data due to Croft and Krifka (cf. von Fintel 1994: fn. 25, p. 178):

(27) *There are lions and tigers in the cage.*
Every lion has a mane.   can be restricted
A lion has a mane.   unrestricted
Lions have manes.   unrestricted
A lion always has a mane.   unrestricted

Non-nominal quantifiers

(28) Kai rarely eats with chopsticks.

What is the analogue of the Nominal Restriction Doctrine with adverbial quantifiers?

Summary so far

The proposal in my dissertation looks pretty good.

- *C* variable as (inevitable) argument of quantifiers
- can be complex (to allow binding)
- can be intensional (to allow control by intensional operators)

II. Situation variables

Kratzer

- Kratzer, Angelika. 2004. Covert quantifier restrictions in natural languages. Slides from a talk at Palazzo Feltrinelli in Gargnano.
- Kratzer, Angelika. 2014. Situations in natural language semantics. In Edward N. Zalta (ed.), *The Stanford encyclopedia of philosophy*, Spring 2014 edn.

Kratzer's arguments

- *C*-variable unattested as overt pro-form
- Salient sets of individuals can't be picked up

Why is *C* never overt?

Languages don't ever seem to surface the *C* variable as an overt pronominal element.

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Response: well … Matthewson 2001 argues that a contextually supplied choice function can be the source of domain restriction and that it surfaces in St'át'imcets (Lillooet Salish) QPs.

Salience not enough

A salient group of smilers:

☹ ☺ ☺ ☹ ☹ ☺ ☹ ☺ ☹ ☺

☹ ☹ ☺ ☹ ☺ ☹ ☺ ☺ ☹ ☺

☺ ☺ ☺ ☹ ☺ ☺ ☺ ☺ ☺ ☹

☹ ☺ ☺ ☹ ☺ ☺ ☺ ☹ ☺ ☹

(29) Everybody$_C$ is smiling.

Why felt to be false?

An early example

Larson & Segal 1995:

(30) *Boris enters the room and leaves the door open. There are other doors to the room.*
The door is open.

(31) *Boris enters the room twice through different doors, each time leaving the door open. Suppose there are five doors in the room.*
Every door is open.
You left every door open, you dope.

Salience not enough

(32) 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.

A's response seem lunacy. But why, since phonologists are salient?

Compare: *I think that most such linguists would agree with what she said.*

Situations to the rescue

- Austinian topic situations
- Resource situations

Situation Semantics

- Sentences denote propositions (which describe situations)
- A sentence is true of/about a situation (Austinian topic situation)

The card game

(33) *Claire is playing two card games simultaneously.*
I look over at one and I say
Claire has a good hand.

If Claire has a good hand in the other game but not in the one I am looking at, I said something false.

Restriction to topic situations

(34) Everybody had a grand time.

We're talking about the workshop. The workshop situation is the Austinian topic situation for the sentence. Quantifiers in it are restricted to individuals in the topic situation.

More detail

Predicates are functions from individuals to propositions.

$$\lambda s. \text{ every student } s \text{ smiled } s$$

true of any situation *s* such that every *x* that is a student in *s* smiled in *s*

Locality, again

(35) Everybody is asleep and is being monitored by a research assistant.

$$\lambda s.\ \text{everybody}\ s_r\ \text{asleep}\ s$$

true of any situation s such that every x that is somebody in resource situation s_r is asleep in s.

Schwarz 2012

Arguments that the situation argument that allows for reference to resource situations needs to be introduced by the quantifier (rather than being identified with the situation with respect to which predicates are evaluated).

Prediction

Weak quantifiers (which cannot give rise to transparent readings) also should not give rise to readings where they are restricted to a resource situation.

This will be complex and subtle. Here's Schwarz's experiment:

I tell you that I'm teaching a semantics class and that I advertised a university-wide talk by a famous person from the field last Friday. I also tell you that I was hopeful that many of the students from my class would show up, so I was eager to see who was there.

You: So what did you see when you checked who's in the audience?
Me: Well, …

(36) there were exactly three students in attendance.
      (# … in addition to two others from other classes)
(37) exactly three students were in attendance.
      (… in addition to two others from other classes)
(38) there was not a single student to be found.
      (# … though plenty of other people's students had shown up)
(39) not a single student was to be found.
      (… though plenty of other people's students had shown up)

Elbourne's Argument

(40) In this village, if a farmer owns a donkey, he beats the donkey and
      the priest *beats the donkey* too.   strict, *sloppy

(41) In this village, if a farmer owns a donkey, he beats the donkey and
      the priest *beats the donkey he owns* too.   strict, sloppy

Under the *C*-variable approach, we would expect (40) to have a sloppy
reading (the *C*-variable would map the priest to things he owns).

(42) In this village, every farmer who owns a donkey beats the donkey and the priest *beats the donkey* too.   strict, *sloppy

(43) In this village, every farmer who owns a donkey beats the donkey and the priest *beats the donkey he owns* too.   strict, sloppy

Try it with other quantifiers:

(44) In this village, if a farmer owns donkeys, he beats every donkey and the priest *beats every donkey* too.   strict, *sloppy

(45) In this village, if a farmer owns donkeys, he beats every donkey and the priest *beats every donkey he owns* too.   strict, sloppy

Another argument from Elbourne

Focus on the co-varying reading of the following sentence:

(46) John fed no cat of Mary's before it was bathed.

Compare:

(47) John fed no cat of Mary's before the cat of Mary's was bathed.

(48) John fed no cat of Mary's before Mary's cat was bathed.

Elbourne 2008: argument for C-variable (as argument of D), against Stanley (& Szabó) and situation account

But OK for D-situation account, I think.

Interim conclusion

The situation-based account is a serious competitor to the old *C*-variable approach.

III. Domain widening

Potatoes

(49) *Will there be French fries tonight?*
No, I don't have potatoes.
Maybe you have just a couple of potatoes that I could take and fry in my room?
Sorry, I don't have ANY potatoes.

Kadmon & Landman 1993:

- *any* signals that the domain is being widened
- widening only licit when it strengthens the meaning
- predicts NPI distribution

Arregui 2008

Weak indefinites don't like to be restricted:

(50) *A friend comes in from the rain, soaked*
    The friend: Can you lend me socks?
    You have just put every sock you own into the washing machine
    You: Sorry, I don't have socks.
    (Your friend looks at you strangely.)

(51) *A friend approaches you at a barbecue with a plate of veggie burgers he*
      has recently finished cooking. They are burnt.
      Your friend: Do you want veggie burgers?
      You: No thanks, I don't want veggie burgers.
      You wait until your friend has gone away, and then turn to someone
      beside you who's carrying a plate of nicely done veggie burgers
      You: I want veggie burgers.

- problematic for the Stanley (& Szabó) line
- consistent with accounts that locate the covert restriction with strong quantifiers

Arregui's point

If these weak indefinites are not interpreted in a restricted way at all, how can adding *any* widen the domain?

Chierchia

- uses the "widening" imagery
- but has an official proposal that's not quite that
- and thus, I think, is immune to Arregui's worry

Chierchia's official analysis

$[\![\mathsf{any}_D]\!]_o = \lambda P.\lambda Q \; \exists x \in D \colon P \wedge D(x) = 1 \text{ and } Q(x) = 1$

$[\![\mathsf{any}_D]\!]_{\mathsf{alt}} = \{\lambda P.\lambda Q \; \exists x \in D' \colon P \wedge D'(x) = 1 \text{ and } Q(x) = 1 \mid D' \subseteq D\}$

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The smaller domain alternatives induced by *any* are subject to obligatory exhaustification, i.e. they are signaled as false. This explains the NPI nature of *any*.

One more example from Arregui

(52) Me: In his French class, John was horrible to the male students.
You: Actually, he didn't give any (ANY) students their grade.

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Can this be done in a situation-based approach?

The End