‘Even’ questions and context
DGfS Context workshop

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Feb 25, 2011
Quantifier domain restrictions

Big picture question:

- What representations and mechanisms underly operator domain restriction? (Westerstahl 1984; von Fintel 1994; Recanati 1996; Stanley and Szabó 2000; Martí 2003, many others)

(1) I talked to the class. Everyone is going to the party.
   ⇒ Everyone (in the class) is going to the party.

(2) The light is on, so Alfonso must be there. He always turns off the light.
   ⇒ He always (when he leaves) turns off the light.
Quantifier domain restrictions

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    ⇒ Everyone (in the class) is going to the party.

(2) The light is on, so Alfonso must be there. He always turns off the light.
    ⇒ He always (when he leaves) turns off the light.
Even questions

(3) A: Everyone is going to the party.
   B: Even Alfonso?

(4) A: The weather is always nice here.
   B: Even in January? / Even when it rains?

(5) A: Alfonso might go to the party.
   B: Even if he has an exam tomorrow?
Function of an even question

“Even” questions ask about the generality of an prior domain restriction. *Antecedent domain restriction* from operator in prior utterance.

(6) A: *Everyone* is going to the party.
    B: Even Alfonso?

(7) A: Alfonso *might* go to the party.
    B: Even if he has an exam tomorrow?

• What is the right compositional analysis?
• What can we learn about domain restriction?
Function of an even question

Function: question a domain restriction in prior discourse.

Q: does this characterize the analysis?
Main claims

1. “Even” questions have only an indirect relationship with the antecedent domain.

2. Interaction mediated by context-set-type contextual representation. Question is about domain because “even”-question indirectly highlights uncertainty about content of domain.

3. “Even” questions are fragment-like rising declaratives; compositionally interpreted as full sentences.
1 Introduction

2 A domain-variable coreference analysis

3 Problems with direct anaphoricity

4 The indirect analysis

5 Conclusions

6 Test
A domain-variable coreference analysis

A utters:

Every student left

Context:

Even John?

B responds:

Even John?
A domain-variable coreference analysis

A utters:

Every student left

Context:

\[
\begin{align*}
s_c &= A \\
h_c &= B \\
... &= ...
\end{align*}
\]

domain \( i \) = \{Alfonso, Joanna, ...\}

B responds:

Even John?
A domain-variable coreference analysis

A utters:

Every student left

Context:

\[ s_c = A \]
\[ h_c = B \]
\[ \ldots = \ldots \]
\[ \text{domain}^i = \{ \text{Alfonso, Joanna, \ldots} \} \]

B responds:

Even John?
A domain-variable coreference analysis

A utters:

Every $i$ student left

Context:

$s_c = B$

$h_c = A$

... = ...$

domain $i = \{\text{Alfonso, Joanna, ...}\}$

B responds:

Even $i$, John?
A domain-variable coreference analysis

A utters:
Every \( i \) student left

Context:

\[ s_c = B \]
\[ h_c = A \]
\[ \ldots = \ldots \]

domain \( i \) = \{Alfonso, Joanna, \ldots\}

B responds:
Even \( i \) John?
A domain-variable analysis (implementation)

Assume Hamblin-style representation of questions as sets of propositions ≈ possible answers.

\[(8) \quad [\text{everyone}_i]^{h,w} = \lambda P_{\langle et \rangle} \cdot \lambda Q_{\langle et \rangle} \cdot (P \cap h(i)(w)) \subseteq Q\]

- \(h\) is assignment function – assume can return objects of various types.
- Domains for D-quantifiers are variables of type \(\langle s \langle et \rangle \rangle\) (Stanley and Szabó, 2000).
- \(h(i)(w)\) is the domain \(i\) at world \(w\) (a set of individuals).

\[(9) \quad [\text{Even}_i \alpha ?]^{h,w} = \begin{cases} \lambda w'. [\alpha]^{h,w'} \in h(i)(w'), \\ \lambda w'. [\alpha]^{h,w'} \notin h(i)(w') \end{cases}\]

Presupposes: \([\alpha]^h\) is the least likely(/etc) element on some salient scale.

Paraphrase: is even \(\alpha\) in domain \(i\)?
A domain-variable analysis (implementation)

Assume Hamblin-style representation of questions as sets of propositions \( \approx \) possible answers.

(8) \([\text{everyone}_i]^{h,w} = \lambda P_{\langle \text{et} \rangle}. \lambda Q_{\langle \text{et} \rangle}. (P \cap h(i)(w)) \subseteq Q\)

- \(h\) is assignment function – assume can return objects of various types.
- Domains for D-quantifiers are variables of type \(\langle s\langle \text{et} \rangle \rangle\) (Stanley and Szabó, 2000).
- \(h(i)(w)\) is the domain \(i\) at world \(w\) (a set of individuals).

(9) \([\text{Even}_i \alpha?]^{h,w} = \begin{cases} \lambda w'. [\alpha]^{h,w'} \in h(i)(w'), \\ \lambda w'. [\alpha]^{h,w'} \not\in h(i)(w') \end{cases}\)

Presupposes: \([\alpha]^h\) is the least likely(etc) element on some salient scale.

Paraphrase: is even \(\alpha\) in domain \(i\)?
A domain-variable analysis (implementation)

(10) \([\text{Even}; \text{Alfonso}?]^h,w = \begin{cases} 
\lambda w'. \text{Alfonso} \in h(i)(w'), & \\
\lambda w'. \text{Alfonso} \notin h(i)(w') 
\end{cases}\)

Presupposes: Alfonso is the least likely (/etc) element on some salient scale.

Paraphrase: *is even Alfonso in domain i?*
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Domain variables: problem 1

- While this *resembles* the standard account of “even”, it is *not* the standard account.
  - Not propositional. Not focus sensitive.
- Entry based on Guerzoni 2003 p. 55 (based in turn on Karttunen and Peters 1979; Rooth 1985; Wilkinson 1996, etc.):

\[(11) \begin{align*}
\text{[even]}^w &= \lambda C_{\langle st \rangle t} \cdot \lambda p_{\langle st \rangle} \cdot p(w) \\
\text{defined only if:} & \\
a. & \quad p \in C \\
b. & \quad \forall q \in C : q \neq p \rightarrow q > w_{\text{likely}} p \\
c. & \quad \exists q \in C : q \neq p \land q(w) = 1
\end{align*}
\]

- *C* is a set of (propositional) focus alternatives.
- Unified account?
Domain variables: problem 2

- Cross-categoriality: nearly any XP can appear as $\alpha$.

  (12) A: Everything that happened surprised me. B: Even that Alfonso showed up?
  (13) A: Alfonso went everywhere. B: Even to the park?
  (14) A: Alfonso is going to the party. B: Even though it’s at Joanna’s?

- Possible to extend toy account for some data...but desirable?
- Cross-categoriality of attachment for standard “even” explained by focus sensitivity.
Related: syntactic type of XP determined by antecedent domain. XP used to restrict domain in full sentence.

(15) A: Alfonso might go. B: Even if Joanna is there?
(16) A: Alfonso might go. B: #Even Joanna is there?

Not predicted – all we should need to restrict the domain of “might” is a proposition.

Temporal QAdv ⇒ “when”/“before”/“etc”/”
“everywhere” ⇒ path PP.

Exception: Quantified DP ⇒ referential DP. (Not NP.)

Matching of syntactic clause type?
Domain variable coreference: problem 2’

- Related: syntactic type of XP determined by antecedent domain. XP used to restrict domain in full sentence.

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  (16) A: Alfonso might go. B: #Even Joanna is there?

- Not predicted – all we should need to restrict the domain of “might” is a proposition.
- Temporal QAdv ⇒ “when”/“before”“etc/”
- “everywhere” ⇒ path PP.
- Exception: Quantified DP ⇒ referential DP. (Not NP.)
- Matching of syntactic clause type?
Interaction with non-universal quantifiers:

(17) A: Someone / many people are going to the party.
B: # Even Alfonso?

Not predicted: question meaning should be coherent.

(18) Paraphrase: are you including even Alfonso when you make that claim?

(Caveat: DP-specific.)
Domain variables: problem 3

- Interaction with negative quantifiers:

  (19) A: No one is going to the party.
  B: # Even Alfonso?
  B': ✓ Not even Alfonso?

- Not predicted: what would negation even be doing?
- Coherent question meaning also predicted.
Domain variables: problem 3'

- Full responses with “even” follow the same patterns:

  (20)  
  A: Someone is going to the party.  
  B: # Is even Alfonso going to the party?  

  (21)  
  A: No one is going to the party.  
  B: # Is even Alfonso going to the party?  
  B': Is even Alfonso not going to the party?  

- Evidence for a unified “even”? Connectivity effect?
Introduction

A domain-variable coreference analysis

Problems with direct anaphoricity

The indirect analysis

Conclusions

Test
Even questions without coreference

Proposal: “even” questions are non-sententials

- In particular: elliptical (Merchant, 2004; Arregi, 2010).
  - Focused constituent moves to left periphery, remainder elided.

(22) [[Even John]; [[Q] t; is going to the party]]?

- Standard account of “even” usable – can exploit covert syntactic structure.
- Type of question: rising declarative. (Not straightforward polar question.)
- Problem data follows from ellipsis analysis.
Even questions without coreference

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\[(22) \quad \text{[[Even John]; } [\text{[Q] - } t_i \text{ is going to the party]]?}\]

- Standard account of “even” usable – can exploit covert syntactic structure.
- Type of question: rising declarative. (Not straightforward polar question.)
- Problem data follows from ellipsis analysis.
Connectivity effects 1: matching XPs

- Syntactic matching effects between XPs and the antecedent domain type are expected.
- XP has to be licensed by syntax of full clause.
  - E.g. “if” shows up because its source is a normal adjunct in a partly elided full sentence.

(23) A: Alfonso might go to the party.
    B: Even if Joanna is there?

(24) [Even if Joanna is there]; [[Q] t; Alfonso might go to the party]?

- Clausal modifier XPs analogous to sprouting (Chung et al., 1995).
- Also expected: lack of prejacent NPs.
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Connectivity effects 2: matching polarity

- Polarity matching effects expected: without negation, question is positive:

\[(25) \text{No one is going to the party.} \]
\[(26) \text{B: } \# \text{Even Alfonso is going to the party?} \]
\[
\text{B'}: \# \text{Even Alfonso? } [t \text{is going to the party}]
\]
\[(27) \text{B: Not even Alfonso is going to the party?} \]
\[
\text{B'}: \text{Not even Alfonso? } [t \text{is going to the party}]
\]

- Asker attributes positive claim to askee (rising declarative).
- Impossible LF for “Even Alfonso?” given (25):

\[(28) \text{Even Alfonso? } [\text{is not going to the party}] \]
Universal-only constraint

- Follows from ellipsis analysis + assumption that “even” questions are ‘rising declaratives’, not polar Qs per se.
- Gunlogson 2001, 2008: rising declaratives propose/licensed by a possible hearer commitment. (Or a non-speaker commitment.)
- Only universals, given certainty about domain, must commit antecedent utterer to prejacent.

(29) A: Someone went to the talk.
    B: Only one person?

A curiosity:

(30) A: Bill went to the talk.
    B: # Not even John?
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(30) A: Bill went to the talk.
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Doing without coreference: the antecedent

- How to derive interaction with antecedent? Direct coreference no longer possible. I.e. how to make “even” question about domain?
- Basic idea: “even” question addresses (public) uncertainty about what is in a domain.
  - “Even”-question would work out to be vacuous under public certainty about the domain.
  - So, askee infers that asker does not accept certainty about domain.
- Analysis is neutral on question of domain variables in general.
Doing without coreference: version 1

(Temporarily assume domain variable in antecedent)

(31) $[\text{Everyone}_i \text{ is going to the party}]^h = \lambda w . \forall x \in h(i)(w) : x \text{ is going to the party in } w$

(32) $[(\text{Even}) \text{ Alfonso is going to the party?}] = \{ \lambda w' . \text{Alfonso is going in } w', \lambda w' . \neg \text{Alfonso is going in } w' \}$

(presuppositions: ... (see earlier))

- “Even”-question will be non-vacuous only for assignments where the value of $i$ is contingent after antecedent!
  - I.e. vacuous if antecedent eliminates all worlds in one alternative.
  - Effect: signal speaker uncertainty about $h(i)$.
  - Follows without stipulation from ellipsis account.
Doing without coreference

(33) $\lbrack \text{Everyone; is going to the party} \rbrack^h = \lambda w. \forall x \in h(i)(w) : x \text{ is going to the party in } w$

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(presuppositions: ... (see earlier))

- Starting (toy) context set of $w_1, w_2, w_3$.
- Constant domain (epistemic certainty):
  - Assume $h(i)(w) = \{A, J, H\}$ for all $w$.
  - At $w_1$, A,J,H go to the party. At $w_2, w_3$, A&H go.
  - Universal claim about $i$ eliminates $w_2, w_3$, leaving only $w_1$. But now the remaining worlds already determine answer to question. Alfonso goes.

- Contingent domain (epistemic uncertainty):
  - Assume $h(i)(w) = \{A, J, H\}$ at $w_1, w_2$, and $\{J, H\}$ at $w_3$.
  - Question is no longer vacuous – it is resolved by determining which domain we were working with!
Doing without coreference

(33) \[\text{Everyone; is going to the party}]^h = \lambda w . \forall x \in h(i)(w) : x \text{ is going to the party in } w\]

(34) \[\text{(Even) Alfonso is going to the party?}] = \begin{cases} \lambda w'. \text{Alfonso is going in } w', \\ \lambda w'. \neg \text{Alfonso is going in } w' \end{cases}

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• Do we need to assume intensional domains (objects of type \langle s\langle et\rangle \rangle)?

• No. Assume domain variables of type \langle et\rangle...

• No world argument $\Rightarrow$ “even”-question is vacuous (resolved by the input context).

• Rawlins (to appear): certain types of vacuous questions are generally used to signal that asker does not accept askee’s view of the common ground.

• Vacuous questions trigger conversational backoff: public context backed off of universal claim at all worlds.

• Cf.

(35)
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• No. Assume domain variables of type \langle et \rangle ...  
• No world argument ⇒ “even”-question is vacuous (resolved by the input context).  
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• Vacuous questions trigger conversational backoff: public context backed off of universal claim at all worlds.  
• Cf.  

(35) A: Alfonso is going to the party. B: What if Joanna is there?
Do we need to assume domain variables at all?

No, as long as some process delivers update to context set that represents the effect of domain restriction. (Free enrichment, etc.)

‘Domain’ for “even”-question determined entirely by worlds eliminated by (potentially enriched) antecedent utterance.
Indirect coreference

A utters:

Every(i) student left

Context:

\[ s_c = A \]
\[ h_c = B \]
\[ ... = ... \]

context set = \{\(w_1, w_2, w_3, w_4, w_5, w_6, \ldots\}\}

B responds:

Even John? \([[Q] \text{ left}]\)
Indirect coreference

A utters:
Every(i) student left

Context:

\[ s_c = A \]
\[ h_c = B \]
\[ \text{context set} = \{w_1, w_2, w_3, w_4, w_5, w_6, \ldots \} \]

B responds:
Even John? [[Q] left]
Indirect coreference

A utters:

Every(i) student left

Context:

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\[ \ldots = \ldots \]

context set = \{w_1, w_2, w_3, w_4, w_5, w_6, \ldots \}

B responds:

Even John? \([Q]\) left

worlds where some student (in the domain) didn’t leave
Indirect coreference

A utters:
Every($i$) student left

context set = \{w_1, w_2, w_3, w_4, w_5, w_6, ...\}

Context:

Even John? \([Q\text{-}left]\)

vacuous?
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Computation of focus alternatives

Recall presupposition: prejacent proposition is the least likely(/etc.) on some scale of alternative propositions.

- Relationship between scalar focus alternatives and antecedent domain?
- Claim: scalar alternatives computed from the form of the “even”-question (LF) itself, via givenness (Schwarzschild, 1999).
- Relationship still indirect. (Cf. Moxey and Sanford 1986; Devlin 1997)

Unresolved issue: role of scalar alternatives in licensing “even” questions?
Conclusions

- Representation of domains in “even”-questions is indirect.
  - No domain variables required in contextual representation.
  - Instead, information about possibilities – Stalnaker-style context set.
  - Contextualist commitment still required!

- What does it mean that the function is so divorced from the analysis?
  - Suggestive: sets of individuals are not the right representation of quantifier domains in the first place.
  - Replacement theory? Austinian topic situations (Recanati 1996; Kratzer 2004 etc.).
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Challenge question

Quine: to be is to be the value of a variable.

Is there a similar construction in some language that does interact directly with domains?

Possible candidate (Rawlins, 2010):

(36) A: No one / everyone is going to the party.
    B: What about Alfonso?

However, “What about” questions have functions that apparently aren’t domain-related at all.

(37) A: Who should we invite?
    B: What about Alfonso?
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Acknowledgements

For discussion of this and related work I am grateful to Pranav Anand, Cleo Condoravdi, Donka Farkas, Ilaria Frana, Jeroen Groenendijk, Christine Gunlogson, Valentine Hacquard, James Isaacs, Christina Kim, Ruth Kramer, Bill Ladusaw, Jason Stanley, Tamina Stephenson (who first drew my attention to this data), Colin Wilson, members of the JHU Semantics Lab, and audiences at the University of Rochester, WCCFL 28, and SALT 20.


Bibliography II


