

# Questions of ignorance

## Talk at University of Goettingen

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## Goal of talk: give an account of the interpretation of marked “wh”-items in English questions.

“Enhanced ignorance questions:”

- (1) What on earth is a marked “wh”-item?
- (2) Who the hell cares?
- (3) Whatever happened to d-linking, anyways?

Connection to central empirical issues in multiple domains:

- Expressives, marked ‘wh’-items.
- Syntax of questions: Pesetsky 1987; Lasnik and Saito 1992; den Dikken and Giannakidou 2002; Huang and Ochi 2004
- Biased questions.

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## Some larger issues

- Contribution of “-ever” across constructions:
  - (4) Whatever happened to Alfonso? (*Question*)
  - (5) Whoever goes to the party, it will be fun. (*Unconditional*)
  - (6) Whoever goes to the party will have fun. (*Free relative*)
- An understanding of the nature of Pesetsky’s d-linking.
- An understanding of the properties of marked “wh”-items across languages, and free choice indefinites more generally.

# Agenda

- 1 Introduction
- 2 Core data: five puzzles  
Further data
- 3 An extensional widening account
- 4 Are domain alternatives the solution?
- 5 The scope of the semantic contribution
- 6 Analysis: intensional widening
- 7 The attentive effect and d-linking
- 8 Solving the remaining puzzles
- 9 Conclusions

## Five data puzzles

- Enhanced ignorance – EIQs convey epistemic uncertainty.
- Anti-d-linking – EIQs can convey non-familiarity.
- Fixed domain effects – behavior under fixed extensional domains.
- Surprise – can convey surprise / mirativity.
- Modal concord effects.

## Puzzle 1: Enhanced ignorance

Searlean preparatory condition for questions (Searle, 1969): speaker does not know the answer.

(7) Scenario: we are waiting for Alfonso to arrive, who is late.

A: Where is Alfonso?

A': Where on earth is Alfonso?

- A' response seems to convey *extra* uncertainty.

### Enhanced ignorance

Marked “wh”-items imply that the speaker is ignorant beyond the usual level of uncertainty for questioning.



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# Analysis N?

von Steinhilber's 2000 Analysis N (building on Dayal 1997:

(8) Whatever Arlo is cooking has a lot of garlic in it.  
    ↪ Speaker does not know what Arlo is cooking.

- Variation presupposition: there are epistemically accessible worlds that differ as to the referent of “what Arlo is cooking.”
- Extend to questions? (Technically possible.)
- The puzzle: information-seeking questions already guarantee variation!

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## Puzzle 2: The anti-d-linking effect

Pesetsky 1987: “Aggressively non-d(iscourse)-linked wh-phrases”

(9) Scenario: A is at the LSA, and see Joanna talking to someone. A says:

A: Who on earth is Joanna talking to?

↪ J. is not talking to someone in the obvious domain (e.g. not a linguist?).

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## The anti-d-linking effect

Pesetsky 1987: “Aggressively non-d-linked wh-phrases”

(10) Scenario: we go into a classroom where A's TA, Joanna, has been proctoring an exam. A sees her talking to someone, and says:

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↪ J. is not(/does not seem to be) talking to a student.

### Anti-d-linking

Marked “wh”-items can imply that the answer does not correspond to an individual in a salient domain.

Main analysis: den Dikken and Giannakidou 2002 build on anti-d-linking.

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# Prediction

The first two puzzles might lead to a question: what happens in contexts where all the possible answers involve known individuals?

## Puzzle 3: The interaction with fixed domains

Fixed-domain effects (Rawlins, 2008):

- (11) Scenario: a reality show is nearing the end of its season. 3 candidates are left, and the competition is fierce. On the task for this episode, all of the competitors do extremely well. It is hard to tell who the judges will pick as the person to send home.
- Who will they pick?
  - Who on earth will they pick?
- “Enhanced ignorance” intuition still distinguishes the two questions.

### Fixed domain effects

Marked “wh”-items are licit when extensional domain is completely fixed; ignorance implication still present.

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## Puzzle 4: Ignorance vs. surprise: facing the facts scenarios

A further question: what happens when the answer is not just domain-fixed, but evident?

(12) Scenario: speaker sees Alfonso wearing a purple and orange striped sweater.

A: What on earth is Alfonso wearing?

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## Facing the facts scenarios cont'd

(13) Scenario: speaker walks into his office, and sees his girlfriend deleting all the files on their computer:

A: What on earth are you doing?

(ex. due to Arild Hestvik, p.c.)

- Implication: speaker is surprised at facts. Cf. *mirativity*, DeLancey 1997; Bustamente 2011 a.o.
- Alternatively: speaker is ignorant about *explanation* of the facts, not facts themselves. But can this be reduced to ignorance?

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EIQs remain felicitous even when answer is evident. In this case, they receive a mirative reading.

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## Puzzle 5: Interaction with modals

A puzzle of a different kind. Some approximately synonymous questions:

- (14) Scenario: Alfonso running late.
- a. What on earth is Alfonso doing?
  - b. What could Alfonso be doing?
  - c. What on earth could Alfonso be doing?
  - d. (WHAT is alfonso DOING?)
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  - Puzzle: why should these questions all be synonymous?

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## Summing up

Puzzles 1-4: implications triggered by enhanced ignorance questions in different scenarios.

- Puzzles 1,3: (Enhanced) ignorance, regardless of whether domain is fixed.
- Puzzle 2: Anti-d-linking.
- Puzzle 4: Mirativity.

No one of these cases can be the whole story!

# Data summary

Analytical tension:

- Ignorance / anti-d-linking implications...

vs.

- Facing-the-facts / fixed domain effects.

Ignorance / anti-d-linking involve considering unknown individuals.  
But fixed domain effects show that we needn't.

- Semantic contribution of epithets still present in fixed domain scenarios!

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Some additional data points.

## The expressive content of (some) epithets

- Some marked “wh”-items have negative expressive content.

(15) What is wrong with Alfonso?

(16) What {the hell / the fuck} is wrong with Alfonso?  
    ↪ speaker has negative emotion re Alfonso.

- But some don't:

(17) # What on earth is wrong with him?

(18) # Whatever is wrong with him?

- Potts 2010: “wh- the hell” has the profile of a negative expressive item. “wh- on earth” is more neutral.

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Marked “wh”-items may contain negative expressive content, but this expressive component is secondary to core meaning

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## Interaction with Q-embedding verbs

- Questions with marked “wh”-items are generally embeddable.
- den Dikken and Giannakidou 2002: “wh”-epithets are polarity items, licensed only in non-veridical contexts.

(19) \* Alfonso knows who on earth is going to the party.

(20) Alfonso doesn't know who on earth is going to the party.

(21) Alfonso wondered who on earth is going to the party.

- “wh-ever” hard to get in embedded interrogatives, except under verbs that themselves convey substantial ignorance:

(22) I have no idea whatever it was they were looking for, but they didn't seem to find it. (google)

(23) ?? I don't know whatever it was they were looking for, but they didn't seem to find it.

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## Rhetorical readings

(24) Scenario: we are waiting for Alfonso to arrive, who is late.

A: Where is Alfonso?

A': Where on earth is Alfonso?

- Contrast: A seems to be genuinely attempting to “elicit information” (Searle) interlocutor. (Or at least, more so.)
- A' conveys little or no expectation that interlocutor will be able to answer.
- I.e. rhetorical-ish implication: “there is no good answer to this question.”

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## Rhetorical readings II

- Common with modals...

(25) Why on earth would anyone ever eat haggis?

(26) Why on earth would an ex who has dumped me call me?  
(google)

(27) Why the hell would anyone want to buy Milky the Bunny for their kid this Christmas? (google)

(28) Why the hell would someone put an exhaust system on a DODGE NEON.... ? (google)

- But...also common as a headline of an article that goes on to explain why the implication is false.



## An extensional widening account: widening + expressivity

- den Dikken and Giannakidou 2002: effect of epithet comes in two parts.
  - Domain extension (/widening): referent for “wh-the-hell”-item can be drawn from any element in maximal domain compatible with presuppositions.
  - Expressivity: epithet contributes a negative modal presupposition.
- Domain extension an implementation of Pesetsky.

## Den Dikken and Giannakidou's domain extension

*“When attached to a wh-word, the modifier the-hell, we argue, extends the domain of quantification to include familiar and novel values. This we call domain extension. As a result of domain extension, the domain of quantification for wh-the-hell is the entire domain D, and not just a presupposed subset of it, as with regular wh-words.” (den Dikken and Giannakidou 2002 p. 43)*

Similar proposals: Conlin et al. 2003; Polinsky 2007. Cf. Kadmon and Landman 1993 on widening.

# Predictions

Fixed-domain scenarios:

(29) (reality show scenario)

- a. Who will they pick?
- b. Who on earth will they pick?

- Prediction given widening alone: synonymous or infelicitous.
- Synonymous – if domain expansion could be trivial.
- Conclusion: anti-d-linking/extensional domain widening is not the core contribution of “wh”-markers.

## D&G's expressive component

(30) Who the hell talked to Ariadne?

**presupposes:** “If there is a person  $x$  in  $w$ , and  $x$  talked to Ariadne in  $w$ :  $x$  should not have talked to Ariadne in  $w$ .”

### Technical implementation

(31) Presupposition of negative attitude of “wh-the-hell”

(den Dikken and Giannakidou 2002 ex. 38, *sic*)

In the actual world  $w$ : If

$\exists x [P(x)(w) \wedge Q(x)(w)] \rightarrow \text{SHOULD} \neg Q(x)(w)$ , for all possible values of  $x$ .

(where  $x$  is the variable of “wh-the-hell”,  $P$  is the property denoted by the “wh-the-hell” phrase, and  $Q$  is the property denoted by the VP.)

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# The role of expressive content

Can expressive content explain the non-synonymy?

- My claim 1: “on earth” lacks the kind of modal expressive content den Dikken and Giannakidou (2002) attribute to “the hell”.
- My claim 2: “the hell” does not generally involve the proposed expressive content either.

# The role of expressive content

Claim 1: “On earth” and others lack expressive content.

(32) Who on earth talked to Ariadne?

(33) Whoever talked to Ariadne?

**Does not presuppose or imply:** If there is an  $x$  who talked to Ariadne,  $x$  shouldn't have talked to her.

Claim 2: “The hell” does not always have the content D&G claim.

(34) Who the hell is Alfonso talking to?

(35) What the hell am I supposed to do with this form?

(36) Where the hell does Alfonso live?

E.g. (36) *does not presuppose* that Alfonso should not live where he does.

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# The role of expressive content

- Some epithets undoubtedly have expressive content.
- This content is not always negative.
- This content, when negative, is not always paraphrasable with a “should”-type reading.
- My claim: any modal inferences of this type are only inferred, not part of the content of the questions.

## Conclusion on expressive content

While some marked “wh”-items can signal (negative) expressivity, contra D&G this is not part of the core meaning present across all marked “wh”-items.  $\therefore$  Cannot explain non-synonymy.

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# Extensional widening + expressivity?

## Pros:

- The account explains anti-d-linking effects.
- For some cases it explains the enhanced ignorance implication.
- There is a role for expressive content in marked “wh”-items.

∴ This account is onto something.

## Cons:

- Expressivity cannot explain fixed-domain effects.
- Extensional widening alone also cannot explain fixed-domain effects.

∴ But we need a different account.

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## A domain-alternatives account

Objections like this are not unknown (cf. Krifka's 1995 example “any even number”).

- Can the problems with den Dikken & Giannakidou's account be solved with a better version of a widening story?

### An idea

marked “wh”-items activate domain alternatives (Kratzer and Shimoyama, 2002; Chierchia, 2006).

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Basic idea: free choice items that take large domains can activate alternative smaller domains of individuals, triggering inferences based on what is activated. (Chierchia, 2006)

- E.g. Anti-exhaustivity (Kratzer and Shimoyama, 2002): speaker uses a large-domain item in order to avoid a false exhaustivity inference.
- Other items might allow smaller domains, which would provide a stronger claim about the domain than the speaker can make.

Reality show scenario: maximal epistemically possible domain  
 $D = \{A, B, C\}$ .

- Why would speaker wish to exclude smaller domain? (E.g. exclude  $\{B, C\}$  as a possible domain of quantification)
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Reality show scenario: maximal epistemically possible domain  $D = \{A, B, C\}$ .

- Why would speaker wish to exclude smaller domain? (E.g. exclude  $\{B, C\}$  as a possible domain of quantification)
- They are unable to eliminate any individual as a possibility.

## A domain-alternatives account

Sketch for marked “wh”-items: use ‘large’ domain. Trigger anti-exhaustivity inference.

- Technical details are non-trivial in using this in questions, but let us assume solvable.
- Let  $\mathcal{D}$  be the set of alternative domains to  $D$ .

$$(37) \quad \llbracket \text{who}_D \text{ on earth} \rrbracket = \llbracket \text{who}_D \rrbracket$$

presupposes:  $D$  is large

activates:  $\mathcal{D} = \mathcal{P}(D)$

$$(38) \quad \llbracket \text{who}_D \text{ will they pick?} \rrbracket^w = \{p \mid \exists x \in D : p = \lambda w'. \text{they pick } x \text{ in } w'\}$$

$$(39) \quad \llbracket \text{who on earth will they pick?} \rrbracket^w = \llbracket \text{who}_{\max(\mathcal{D})} \text{ will they pick?} \rrbracket^w$$

implies (via some Chierchia-style ‘even’ operator):

$$\forall D \in (\mathcal{D} - \max(\mathcal{D})) : \exists w \in \text{Dox}_s : w \notin$$
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# Domain alternatives

The good:

- Solves the 'enhanced' ignorance puzzle – speaker cannot eliminate any individual in domain.
  - (Though depends on how Searlean preparatory condition is construed.)
- Solves the puzzle of widening not always happening.
- Can lead to anti-d-linking.

## The bad

- **Problem 1:** does not differentiate default domain in this context from that of “wh”-question. (Have to assume they don't activate domain alternatives?)
  - See Arregui 2008: indefinites in general prefer wide domains.
- **Problem 2:** how to formalize necessary E operator?
- **Problem 3:** what does ‘large’ mean when describing a domain?
- **Problem 4:** What about mirative/facing the facts readings?  
What about the modal concord facts?)

It seems we are not quite done...

## Reality show scenario variant

- (40) Reality show scenario variant: A reality show is nearing the end of its season. 3 candidates are left, and the competition is fierce. On the task for this episode, all of the competitors do ok, but one seems to do substantially better than the others. Nothing is certain, though.
- # Who on earth will they pick?
  - I don't know who they will pick.

What to do in this scenario?

## The scope of marking

Next issue: where are epithets interpreted?

# The scope of marking

Question: what is the compositional role of marking on a “wh”-item?

- **Local hypothesis (null):** the semantic contribution of marking on “wh”-items is local, to the items themselves. (Pesetsky, 1987; den Dikken and Giannakidou, 2002; Rawlins, 2008)
- **Clausal hypothesis:** the core semantic contribution is clausal, and the marking (in English) on “wh”-items is purely formal. (Gawron, 2001; Huang and Ochi, 2004)

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I will adopt the clausal hypothesis in this talk.

## Evidence: the distribution of marking

Evidence 1: only the fronted “wh”-item (in English) can be marked with an epithet. (Lee, 1994; den Dikken and Giannakidou, 2002; Huang and Ochi, 2004)

- (41) Who on earth said what to who?
- (42) \* Who on earth said what on earth to who on earth?
- (43) \* Who said what on earth to who on earth?

Evidence 2: When multiple “wh-” with multiple “-ever”s is possible, no additive effect. (Gawron, 2001)

- (44) [<sub>Q</sub> Whoever buys whoever's property], the town council will still grant a building permit.
- (45) [No matter [<sub>Q</sub> who buys who's property] ], the town council will still grant a building permit.



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## Evidence: the interpretation of multiple questions

Flip-side of previous data set: no special status for particular marked item.

(46) Who on earth said what to who?

(47) Who on earth bought what?

- (Note: claim in previous lit – only echoic readings. Set aside for the moment.)
- Intuition: ignorance implication not just about identity of the sayers/buyers.
- Rather, about the matching of people to purchases.
- Anti-d-linking: hard to tell since most natural scenarios are fixed domain scenarios.







## Evidence: discontinuous marking

Japanese (Pesetsky, 1987; Lasnik and Saito, 1992; Huang and Ochi, 2004):

- Adverbial “ittai”, similar:

(49) kare-wa ittai nani-o katta no?  
he-top ittai what-acc bought Q  
“What the hell did you buy?”

(50) ittai kare-wa nani-o katta no?  
ittai he-top what-acc bought Q  
same

(51) ittai Taro-wa Hanako-ga kimi-ni nani-o okutta to  
ittai Taro-top Hanako-nom you-dat what-acc sent that  
omotta no?  
thought Q  
“What the hell did Taro think that Hanako sent to you?”

## Evidence: discontinuous marking

- Parallel elements to “the hell” etc. can appear at a distance from their “wh”-items.
- Act like clausal/propositional operators. Crucial dependency between adverb and Q.
  - Lasnik and Saito (1992): “...*ittai* can be regarded as an adverbial polarity item associated with Q-morphemes in COMP.”
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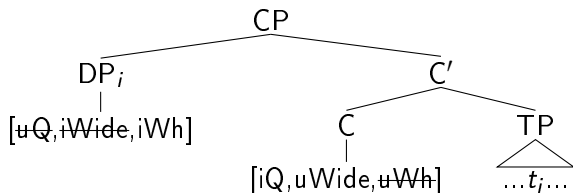
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## Syntactic assumptions

- Clausal Q operator in C: interpretable but unvalued feature, call it *iWide*.
- marked “wh”-DP: valued *uWide*. Provided by epithet/“-ever” itself.
- Pesetsky and Torrego (2007): valuation / interpretability are orthogonal.
- Agree relation between C and DP values feature on C.

(52)



# Expressivity

Assumption: expressive content of epithets is interpreted in a compositionally local, but speaker oriented way, along the lines of CIs in Potts 2003 etc.

- Not too much to say about the details of this content here.
- General strategy: disentangle from more formalizable parts of these items.

## Scope conclusion

The core content that is constant across marked “wh”-items is interpreted as a modifier of the Q operator at the clausal level.

## Analysis: intensional widening

Next question: what can we replace extensional widening with? What exactly happens when the Q operator is modified?

# The context set

Stalnaker 1978 (etc.): context contains information about what claims discourse participants have mutually and publicly agreed on.

- Common ground: set of propositions corresponding to past assertions of participants, plus shared beliefs.
- Context set: set of worlds,  $\cap$  common ground.

Assertions involve reducing the context set.

## Background assumptions about questions

- The denotation of a question is a set of propositional alternatives (Hamblin, 1973).

(53)  $\llbracket \text{Who is Alfonso talking to?} \rrbracket =$

$$\left\{ \begin{array}{l} \lambda w_s. A \text{ is talking to John in } w, \\ \lambda w_s. A \text{ is talking to Sue in } w, \\ \lambda w_s. A \text{ is talking to Bill in } w, \\ \dots \end{array} \right\}$$

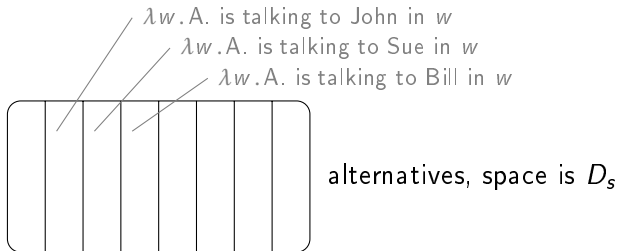


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## Background assumptions about questions

- The denotation of a question is a set of propositional alternatives (Hamblin, 1973).
- More abstractly:

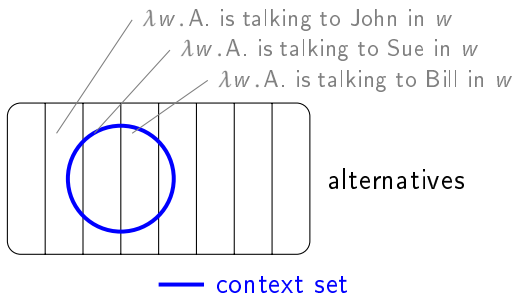
$$(54) \quad \llbracket \text{Who is Alfonso talking to?} \rrbracket = \\ \{p \in D_{\langle st \rangle} \mid \exists x \in D_e : p = \lambda w . A \text{ is talking to } x \text{ in } w\}$$

## Background assumptions about questions

- Asking a question in a context involves (dynamically) updating the contextual representation in a special way.
  - Groenendijk 1999; Isaacs and Rawlins 2008: partition worlds into the context set according to alternatives.
  - Roberts 1996; Buring 2003; Farkas and Bruce 2010: set the content of the question as the current Question Under Discussion.
  - Rawlins 2010: unify these two ideas.

## Background assumptions about questions

- Key thing to remember: asking a question takes place against the current context set.



# The intensional widening analysis

Idea: Marked “wh”-items widen the domain of possible worlds under consideration.

- Chierchia 2006: qualitative widening.
- Cf. Kadmon and Landman 1993 on potatoes.
- Will consider worlds where alternatives are very unlikely. Such worlds typically excluded from consideration.

## Widening vs. wideness

- Actual proposal: wideness presupposition.
- Accommodation may result in widening.
- Content of presupposition: for each alternative, context set contains some worlds where that alternative is a slight possibility.
- Formalization within a Kratzer-style account of modality:

(55)  $c + [Q \text{ whatever/on earth } [\alpha]] = c + [Q \text{ what } [\alpha]]$

defined only if

$\forall p \in \llbracket [\text{what } [\alpha]] \rrbracket^c :$

$$\text{Dom}(c) \cap \left\{ w \left| \begin{array}{l} p \text{ is (strictly) a slight possibility in } w \\ \text{relative to } f_c \text{ and } g_c \end{array} \right. \right\} \neq \emptyset$$

where  $f_c$  is a speaker-oriented epistemic modal base and  $g_c$  a circumstantial ordering source.

## Unpacking the proposal

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- “At-issue” effect on context is same as that of regular question.
- Semantics of question supplies a set of (Hamblin) alternatives.
- “ $\text{Dom}(c)$ ” is the set of worlds in the context set.
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# Compositional implementation

Straightforward compositional implementation:

- LF: wideness operator scopes over CP.
- Composes with alternative set, introduces presupposition.
- I.e. [iWide] is a speech act modifier that introduces the wideness presupposition.

## Slight possibility

- Modular approach. Compatible with a range of assumptions.
- Kratzer 1981:

(56) Kratzer 1981's slight possibility (p. 48)

A proposition  $p$  is a slight possibility in a world  $w$  w.r.t. a modal base  $f$  and an ordering source  $g$  iff,

- (i)  $p$  is compatible with  $f(w)$
- (ii) the negation of  $p$  is a human necessity in  $w$  with respect to  $f$  and  $g$ .

## Slight possibility

- Kratzer 1991: replace “human necessity” above with “weak necessity”:

(57)  $p$  is a weak necessity in  $w$  w.r.t.  $f$  and  $g$  iff  $p$  is a better possibility than  $\neg p$  w.r.t.  $f$  and  $g$ . (Kratzer 1991, def. 11)

(58)  $p$  is a better possibility than  $q$  w.r.t.  $f$  and  $g$  iff  $p$  is at least as good a possibility as  $q$ , but  $q$  is not at least as good a possibility as  $p$ . (def. 10)

(59)  $p$  is at least as good a possibility  $q$  in  $w$  w.r.t.  $f$  and  $g$  iff for all  $u$  s.t.  $u \in \bigcap f(w)$  and  $u \in q$  there is a  $v \in \bigcap f(w)$  such that  $v \leq_{g(w)} u$  and  $v \in p$ . (def. 9)

Kratzer's paraphrase: “...for every accessible  $q$ -world, there is an accessible  $p$ -world which is at least as close to the ideal.”

- I.e. for “ $p$  is a slight possibility”, the sphere of possibility for  $\neg p$  places a strict upper bound on  $p$ .

## The strictness implication

- Requirement: each proposition must be such that there is at least one world that makes that proposition possible but not likely.
  - Effect: lower bound of likelihood the same for each alternative.
  - Typically, meta-uncertainty about at least some alternatives. (They might be unlikely.)
  - Intuition for reality show scenario: include very unlikely ways of differentiating between candidates.
  - Prevent imbalances in likelihood for alternatives.
- (60) Reality show scenario variant: one contestant seems to be doing much better, but there is still uncertainty.
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# The attentive effect

## Lewis Circumscription (my name)

At any given time, speakers are typically excluding possibilities that they deem remote or unlikely, or have simply forgotten.

*Lewis 1979 p.183, my emphasis: "Suppose I am talking with some elected official about the ways he might deal with an embarrassment. So far, we have been ignoring those possibilities that would be political suicide for him. He say: 'You see, I must either destroy the evidence or else claim that I did it to stop Communism. What else can I do?' I rudely reply: 'There is one other possibility – you can put the public interest first for once!' That would be false if the boundary between relevant and ignored possibilities remained stationary. But it is not false in its context, for hitherto ignored possibilities come into consideration and make it true. And the boundary, once shifted outward, stays shifted. If he protests 'I can't do that', he is mistaken."*

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Proposed implementation of wideness/widening:

- 1 Lewis Circumscription amounts to implicitly excluding worlds from context set.
- 2 Low-likelihood modality blocks Lewis Circumscription.
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# The attentive effect, case 1

Case 1: possible answer that is (strictly) unlikely.

- Lewis circumscription  $\Rightarrow$  ignore proposition entirely.
- Effect of blocking circumscription: must consider proposition.

Hamblin semantics: each propositional alternative corresponds to an element in  $D_e$ .

- Circumscribing alternative from Q-meaning out of context set = excluding individuals from domain of “wh”-item.
- Drawing attention to even the least likely propositional alternatives potentially forces inclusion of *individuals* that would otherwise be set aside.
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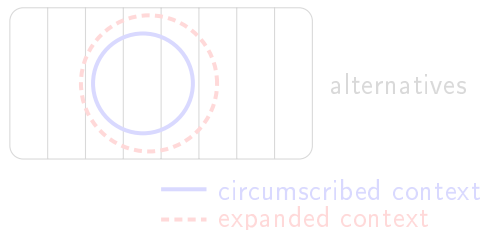


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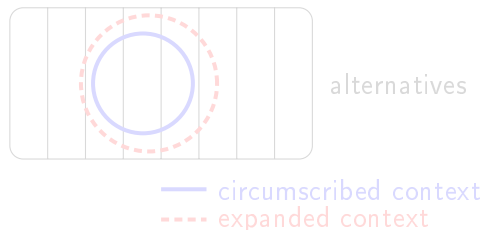


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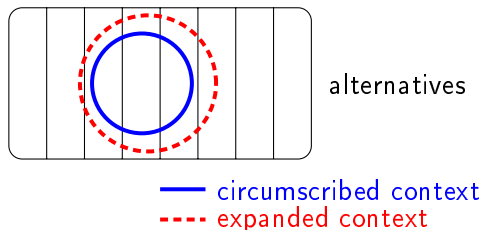


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# The attentive effect, case 1 example

## Case 1 example: anti-d-linking effects

(61) Scenario: Alfonso doesn't like magazines besides Time / Newsweek (Well-known fact). From a distance, you see him reading something with graphic design that doesn't seem like either of these.

A: Who on earth is Alfonso reading?

↪ J. does not seem to be reading Time or Newsweek.

- Circumscribed context: focus on worlds where A. is reading one of the two.
- Effect of epithet: consider worlds where he is reading other things.

# The attentive effect, case 1 example

## Case 1 example: anti-d-linking effects

(61) Scenario: Alfonso doesn't like magazines besides Time / Newsweek (Well-known fact). From a distance, you see him reading something with graphic design that doesn't seem like either of these.

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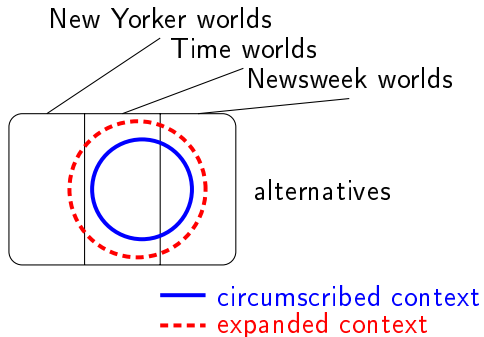
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# Intensional domain widening leads to anti-d-linking



(62)



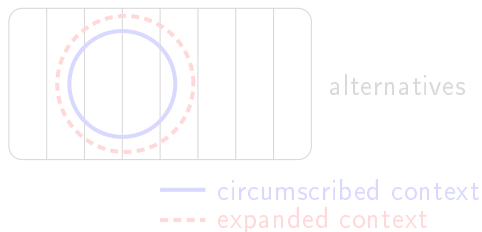
## The context set and domains for questions

Moral: the context set provides an epistemic upper bound for the domains of questions.

## The attentive effect, case 2

Case 2: possible answer that may be likely, may be unlikely.

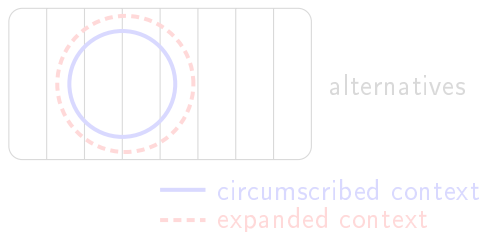
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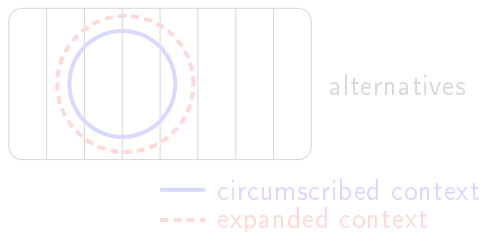
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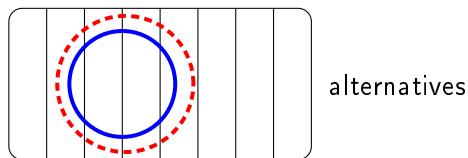
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— circumscribed context  
- - - - expanded context

## The attentive effect, case 2 example

Case 2 example: fixed domain effects.

- Reality show scenario: assume the show is top chef.
- $p_1$  = they pick Alfonso,  $p_2$  = they pick Joanna,  $p_3$  = they pick henry.
- $w_1, w_2, w_3$  involve one candidate's food being drastically better than the other two's. The three propositions are respectively good possibilities in the three worlds.
- $w_4, w_5, w_6$  involve really minute differences. The three propositions are respectively slight possibilities in the three worlds.
- $p_1 = \{w_1, w_4\}$ ,  $p_2 = \{w_2, w_5\}$ ,  $p_3 = \{w_3, w_6\}$
- Suppose context set is in principle compatible with all 6 worlds, but normally we might well circumscribe down to  $\{w_1, w_2, w_3\}$ .
- Epithet forces hearer to consider all 6 worlds.

# What is d-linking?

## Aggressive non-d-linking:

- Domains for questions are filtered through context set.
- Anti-d-linking (when it happens): considering possible worlds that might otherwise be set aside due to implausibility.

Is d-linking really the flip side of this? Probably not.

- Type 1 d-linking: narrowing the context set according to likelihood to filter possible answer to particular questions.
- Type 2 d-linking: “wh”-DP requires antecedent set of individuals.

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# What is d-linking?

Type 2 d-linking (Pesetsky):

(63) What the hell book are you reading?

(64) \* Which the hell book are you reading?

- How to derive contrast? Will leave for future....need good semantics for “which”-DPs (see Velissaratou 2000 etc.)
- Some complicating facts:

(65) Henry read whatever books Joanna told him to.

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# The ignorance implication

Puzzle: if questions already signal ignorance, what is involved in enhancing it?

Answer:

- Question blocks Lewis Circumscription – i.e. prevents any simplifying epistemic assumptions.
- In particular, speaker signals that they cannot ask the question relative to any narrower domain than the widest construal of the context set.
- Resulting inference: hearer may have to consider even the least likely possibilities when answering.
- Another way of thinking about it – avoid false exhaustivity inference of smaller domain of questioning (Kratzer and Shimoyama, 2002).

Epithets/“-ever” as intensional “even”-like items. (Cf. Horn 2000)

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# Domains of questioning

## The role of the context set

Context set provides upper bound for domains of individuals under consideration.

- Widening of c.s. can, but need not, force widening of domain of individuals.
- Individual domains for “wh”-items can be derived from intensional domain.

## Facing the facts

(68) Scenario: speaker sees Alfonso wearing a purple and orange striped sweater.

A: What on earth is Alfonso wearing?

Reminder: surprised / 'mirative' reading.



# What is mirativity?

Bustamente 2011, Spanish miratives marked with tense/aspect:

- Proposition  $p$  being marked as mirative means:
  - $p$  is accepted as true by the speaker.
  - $p$  is not true in the closest epistemically accessible worlds.
    - (Side note: in Bustamente's cases, must be recent epistemic state, not current one.)
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## Modal concord with marked “wh”-items

Proposal: modal facts illustrate modal concord (Geurts and Huitink, 2006; Zeijlstra, 2008; Anand and Brasoveanu, 2010) of epithet/“-ever” with (weak) modals.

(69) Scenario: Alfonso running late.

- a. What on earth is Alfonso doing?
- b. What could Alfonso be doing?
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- I.e. there are not two operators in the LF, and “could” has a similar force/flavor to the epithets. Cf (Geurts and Huitink):

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# Implementing modal concord

- A number of implementation options.
- Zeijlstra 2008: multiple instances of purely formal features, licensed via Multiple Agree.
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## “-ever” across constructions?

Proposal here: “-ever” indicates intensional wideness.

(71) John reads whatever the hell Mary reads.

(72) # John reads whatever on earth Mary reads.

Can the proposal be extended to free relatives?

Yes – but modal concord argument does not work!

(73) # Whatever Arlo could be cooking has a lot of garlic in it.

Unification – for the future.



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# Conclusions

## Interpreting marked “wh”-items

Marked “wh”-items presuppose that the domain of interpretation for the question they appear in is *wide*.

- Domain of interpretation for question: Stalnakerian context set.
- Accommodation of presupposition can lead to widening of intensional domain.
- Indirect effects on extensional domain: widening can (but need not) widen extensional domain.
- Modal account of marking explains modal concord with weak possibility modals.
- Future: generalize to other constructions where widening has been proposed?

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