Domain uniformity in questions

Maayan Abenina-Adar   Yael Sharvit
UCLA   UCLA
mabeninaadar@ucla.edu   ysharvit@gmail.com

1 Introduction

- It is commonly assumed that domains of quantification are contextually restricted (e.g. Weststråhl 1985; von Fintel 1994) and that they change intrasententially (Soames 1986; Lewis 1973)

  (1)   a. Everyone is asleep and is being monitored by a research assistant
         b. The pig is grunting, but the pig with floppy ears is not grunting

- This work assumes that restriction is achieved with implicit domain variables in the LFs of sentences containing a quantificational expression

- Quantificational restriction might work in one of two ways when quantificational expressions appear in interrogative structures

  (2)   **View one: quantificational restrictors may vary across possible answers**

         a. Is everyone asleep, or conducting an interview?
         b. {everyone$_{C1}$ is asleep, everyone$_{C2}$ is conducting an interview}

  (3)   **View two: quantificational restrictors may not vary across possible answers**

         a. Is everyone asleep, or conducting an interview?
         b. {everyone$_{C1}$ is asleep, everyone$_{C1}$ is conducting an interview}

- In another line of work, different views have arisen on presupposition projection in quantificational structures, and they assign different semantic presuppositions to the interrogative in (4)

  (4)   Which$_C$ nation cherishes its king?

  (5)   **View one: Interrogatives have universal presuppositions**

         a. Every nation in C has exactly one king
            (Schlenker 2008, Abrusán 2014, Nicolae 2015 cf. Heim 1983 a.o. on declaratives)

  (6)   **View two: Interrogatives have existential presuppositions**

         a. At least one nation in C has exactly one king
            (Guerzoni 2003, Schwarz & Simonenko 2017 cf. Beaver 2001 a.o. on declaratives)

(7)   We argue for...

    a. **Domain Uniformity (DU):** the requirement that an *elided* quantificational expression's restrictor stay the same across possible answers

    b. **Askability:** the requirement that at least two members of the set of possible answers have their presuppositions satisfied by the common ground

- The argument is based on the contrast between the acceptable polar interrogatives in (8a-b) and the unacceptable 'alternative' interrogatives in (9a-b), which all contain focus-sensitive *even*

(8)   a. Did John even eat the CAKE?
    b. Did even JOHN eat the cake?

(9)   a.*Did John even eat the CAKE, or the CANDY?
    b.*Did even JOHN, or MARY eat the cake?

(10)   a. Did John eat only the CAKE, or the CANDY?
    b. Did only JOHN, or MARY eat the cake?

2 Proposal

- *Even* introduces a presupposition that its prejacent is less likely than any proposition in a subset of the set of its focus-alternatives[1] (Karttunen & Peters 1979, Wilkinson 1996, a.o.)

(11) $\llbracket$even$_C$ [$_S$ ... α^F ...]$\rrbracket^{w,g}$ is defined only if $\llbracket[_S$ ... $\alpha^F...]\rrbracket^g_{\not\varnothing}$ is less likely in w than any other proposition in $\llbracket C \rrbracket^{w,g}$ (where $\llbracket C \rrbracket^{w,g}$ is a subset of the set of focus alternatives to $\llbracket[_S$ ... α^F ...]$\rrbracket^g_{\not\varnothing}$ that minimally contains $\llbracket[_S$ ... α^F ...]$\rrbracket^g_{\not\varnothing}$ and some other element). When defined, $\llbracket$even$_C$ [$_S$ ... α^F ...]$\rrbracket^{w,g}$=1 iff $\llbracket[_S$ ... α^F ...]$\rrbracket^{w,g}$=1.

- Interrogatives denote questions – functions from worlds to sets of true answers (Karttunen 1977)

- We assume *whether*-interrogatives have disjunctive LFs (Guerzoni & Sharvit 2014, cf. Larson 1985, Han & Romero 2004, Biezma & Rawlins 2012)

(12) $\llbracket$or$_4\rrbracket^{g,w} = \lambda p_{st}.\ \lambda q_{st} : w \in \text{DOM}(g(4))\ .\ g(4)(w) = 1 \wedge (g(4) = p \vee g(4) = q)$

                                     (after Rooth & Partee 1982)

(13)   John ate the cake or the candy

    a. LF: ∃ [4 [John ate the cake] or$_4$ [~~John ate~~ the candy]]

    b. When defined, $\llbracket(13a)\rrbracket^{g,w} = 1$ iff $\exists p_{st}\ [p(w) = 1 \wedge (p = \llbracket$John ate the cake$\rrbracket^g_{\not\varnothing} \vee p = \llbracket$John ate the candy$\rrbracket^g_{\not\varnothing})]$

---

[1] $\llbracket\alpha\rrbracket^g_{\not\varnothing}$ is the intension of α relative to assignment g; $\llbracket\alpha\rrbracket^{w,g}$ is the extension of α in world w relative to g. Greenberg 2016a, 2018 argues that *even*'s scalar presupposition involves comparison along a contextually-supplied dimension (not necessarily likelihood). Our examples throughout involve alternatives that are on contextual rather than logical scales, so the discussion could be reproduced with her lexical entry as well.

(14) $[\![?]\!]^{g,w} = \lambda p_{st}.\ \lambda q_{st}.\ q = p$ (Karttunen 1977)

(15) $[\![\text{whether}]\!]^{g,w} = \lambda Q_{\langle st, \langle st, t\rangle\rangle}.\ \lambda p_{st}\colon \{q_{st} : \exists r_{st}[Q(r)(q) = q(w) = 1]\}$ is a singleton.
        $\exists r_{st}[Q(r)(p) = p(w) = 1]$ (modified from Guerzoni & Sharvit 2014)

Basic polar and 'alternative' interrogatives

(16)

a. $[\![①]\!]^{g}_{¢} = \lambda w.\ g(4)(w) = 1 \wedge (g(4) = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee g(4) = [\![\text{John ate the candy}]\!]^{g}_{¢})$

b. $[\![②]\!]^{g,w} = \lambda p_{st}.\ p = [\![①]\!]^{g}_{¢}$

c. $[\![③]\!]^{g,w} = \lambda q_{st}.\ \lambda p_{st}.\ p = [\lambda w.\ q(w) = 1 \wedge (q = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee q = [\![\text{John ate the candy}]\!]^{g}_{¢})]$

d. $[\![④]\!]^{g,w} = \lambda p_{st}\colon \{q_{st} : \exists r_{st}[q = [\lambda w'.\ r(w') = 1 \wedge (r = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee r = [\![\text{John ate the candy}]\!]^{g}_{¢})] \wedge q(w) = 1]\}$ is a singleton. $\exists r_{st}[p = [\lambda w'.\ r(w') = 1 \wedge (r = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee r = [\![\text{John ate the candy}]\!]^{g}_{¢})] \wedge p(w) = 1]$

e. $[\![④]\!]^{g,w} = \lambda p_{st}.\ p$ is the unique member of $\{q_{st} : (q = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee q = [\![\text{John ate the candy}]\!]^{g}_{¢}) \wedge q(w) = 1\}$

- If John ate just the cake in w, the question is defined and denotes the singleton $\{[\![\text{John ate the cake}]\!]^{g}_{¢}\}$, and if John ate just the candy in w, the question is defined and denotes the singleton $\{[\![\text{John ate the candy}]\!]^{g}_{¢}\}$

- If he ate both or neither, the question is undefined, given the partiality of *whether*

- Polar questions are also derived from disjunctive interrogative LFs, where one disjunct is the negation of the other

(17)   Did John eat the cake?

a. LF: whether 4 [? [[John ate the cake] or$_4$ [not [John ate the cake]]]]

b. $[\![(17a)]\!]^{g,w} = \lambda p_{st}.\ p$ is the unique member of $\{q_{st} : (q = [\![\text{John ate the cake}]\!]^{g}_{¢} \vee q = [\![[\text{not [John ate the cake]}]]\!]^{g}_{¢}) \wedge q(w) = 1\}$

Polar and 'alternative' interrogatives with *even*

(18) Did John even eat the CAKE?

   a. LF: whether 4 [? [[even$_C$ [John ate the cake^F]] or$_4$ [not [even$_C$ [John ate the cake^F]]]]]
   b. $\llbracket(18a)\rrbracket^{g,w} = \lambda p_{st}.$ p is the unique member of $\{q_{st} : (q = \llbracket$even$_C$ [John ate the cake^F]$\rrbracket^g_\cancel{c}$ $\vee q = \llbracket$not [even$_C$ [John ate the cake^F]]$\rrbracket^g_\cancel{c}) \wedge q(w) = 1\}$ (inspired by Guerzoni 2004)

(19) *Did John even eat the CAKE, or the CANDY?

   a. LF: whether 4 [? [[even$_C$[John ate the cake^F]] or$_4$ [even$_C$[John ate the candy^F]]]]
   b. $\llbracket(19a)\rrbracket^{g,w} = \lambda p_{st}.$ p is the unique member of $\{q_{st} : (q = \llbracket$even$_C$ [John ate the cake^F]$\rrbracket^g_\cancel{c}$ $\vee q = \llbracket$even$_C$ [John ate the candy^F]$\rrbracket^g_\cancel{c}) \wedge q(w) = 1\}$

(20) **Askability**[2]
   For any question $Q_{\langle s, \langle st,t \rangle \rangle}$ and world w, Q is askable in w only if:
   $|\{p_{st} : p \in Q^{\text{POSS}} \wedge w \in \text{DOM}(p)\}| \geq 2$, where $Q^{\text{POSS}} = \{p_{st} : \exists w'[p \in Q(w')]\}$

- Ellipsis enforces identity between *even*'s domain restrictors in (18)-(19) – we call this effect *Domain Uniformity* (DU)

- Suppose the common ground provides that the food options are the cake and the candy, that John is allergic to something in the cake, and that John showed up hungry

- Assuming that the use of an interrogative is felicitous only if the question it denotes is askable in every world in the common ground, *Did John even eat the cake?* requires the common ground to entail that it's less likely for John to eat cake than candy (satisfied)

- In contrast, **Did John even eat the CAKE, or the CANDY?* requires the common ground to entail that cake is less likely than candy and candy is less likely than cake (unsatisfiable)

(21) When defined, $\llbracket$only$_C$ [$_S \ldots \alpha^F \ldots$]$\rrbracket^{w,g}=1$ iff $\llbracket[_S \ldots \alpha^F \ldots]\rrbracket^{w,g}=1$ and $\forall p \in \llbracket C \rrbracket^{w,g}$ $[\llbracket[_S \ldots \alpha^F \ldots]\rrbracket^g_\cancel{c} \neq p \rightarrow p(w) = 0]$.

(22) Did John eat only the CAKE, or the CANDY?

   a. LF: whether 4 [? [[only$_C$[John ate the cake^F]] or$_4$ [only$_C$[John ate the candy^F]]]]
   b. $\llbracket(22a)\rrbracket^{g,w} = \lambda p_{st}.$ p is the unique member of $\{q_{st} : (q = \llbracket$only$_C$ [John ate the cake^F]$\rrbracket^g_\cancel{c}$ $\vee q = \llbracket$only$_C$ [John ate the candy^F]$\rrbracket^g_\cancel{c}) \wedge q(w) = 1\}$

- The presupposition of *whether* and the meaning of *only* together predict that (22) requires the common ground to entail that John ate one of the two food options exclusively

---

[2]See Oshima 2006 for a similar proposal. We assume reconstruction for constituent questions (Rullmann & Beck 1998).

3   Alternative assumptions and their predictions

- We have assumed Domain Uniformity, Askability, and a particular lexical entry for *even*; these assumptions could be altered in various ways

    (23)   a. **Relaxing DU**: allowing ellipsis of quantificational expressions despite lack of identity between their restrictors
            b. **Weakening Askability**: assigning interrogatives an existential presupposition instead
            c. **Strengthening *even***: assigning *even* an additivity presupposition in addition to a scalarity presupposition

- We show that the full range of facts concerning questions with and without *even* precludes the modifications in (23a-b)

3.1   Relaxing Domain Uniformity

- Relaxing DU would make the presupposition of the 'alternative' interrogative with a single *even* satisfiable, regardless of the interrogative's presuppositional strength

- Suppose the common ground provides that the food options are the cake, the candy, and the chips, that John is allergic to something in both the cake and the candy, and that he was hungry

    (24)   *Did John even eat the CAKE, or the CANDY?
            a. LF: whether 4 [? [[even$_{C1}$[John ate the cake^F]] or$_4$ [even$_{C2}$[John ate the candy^F]]]]

- With a relaxed DU, it is in principle possible that $[\![C1]\!]^{w,g} = \{[\![\text{John ate the cake}]\!]^g_{\cent}, [\![\text{John ate the chips}]\!]^g_{\cent}\}$ and $[\![C2]\!]^{w,g} = \{[\![\text{John ate the candy}]\!]^g_{\cent}, [\![\text{John ate the chips}]\!]^g_{\cent}\}$ and the presuppositions of both possible answers are satisfied; we exclude (24a) with identity under ellipsis

- To explain the covarying reading of (25), it has been argued that quantificational restrictors can be functional (based on von Fintel 1994, citing Heim 1991)

    (25)   Which talk was so exciting that no listener fell asleep?
            a. Which talk x was so exciting that no$_{f(x)}$ listener fell asleep

- A functional restrictor is needed to explain (26)-(27) since the subject of the prejacent varies across possible answers
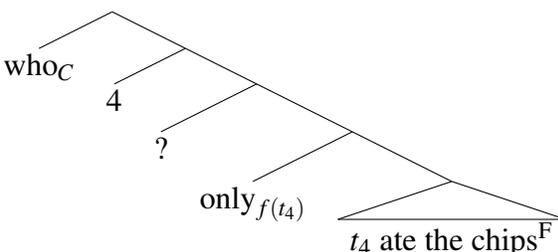
(26) Who even ate the CAKE?

   a.

$$who_C$$
$$4$$
$$?$$
$$even_{f(t_4)}$$
$$t_4 \text{ ate the cake}^F$$
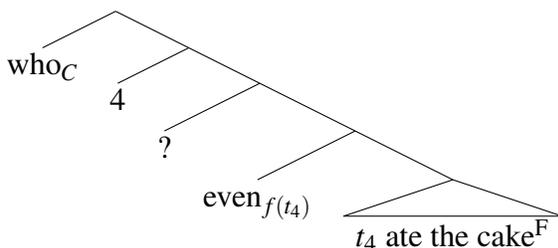
   b. $[\![(26a)]\!]^{g,w} = \{p_{st} : \exists x \in [\![C]\!]^{g,w} \ [p = [\![even]\!]^{g,w}([\![f]\!]^{g,w}(x))(([\![ate\ the\ cake^F]\!]^g_{\cancel{c}})(x))]] \wedge p(w) = 1\}$

(27) Who ate only the CHIPS?

   a.

$$who_C$$
$$4$$
$$?$$
$$only_{f(t_4)}$$
$$t_4 \text{ ate the chips}^F$$

   b. $[\![(27a)]\!]^{g,w} = \{p_{st} : \exists x \in [\![C]\!]^{g,w} \ [p = [\![only]\!]^{g,w}([\![f]\!]^{g,w}(x))([\![ate\ the\ cake^F]\!]^g_{\cancel{c}})(x)] \wedge p(w) = 1\}$

(28) $[\![f]\!]^{g,w} = \left\{ \begin{array}{l} \text{John} \rightarrow \{[\![\text{John ate the cake}]\!]^g_{\cancel{c}}, [\![\text{John ate the candy}]\!]^g_{\cancel{c}}, [\![\text{John ate the chips}]\!]^g_{\cancel{c}}\}, \\ \text{Mary} \rightarrow \{[\![\text{Mary ate the cake}]\!]^g_{\cancel{c}}, [\![\text{Mary ate the candy}]\!]^g_{\cancel{c}}, [\![\text{Mary ate the chips}]\!]^g_{\cancel{c}}\}, \\ \dots \end{array} \right\}$

- The availability of functional restrictors raises the possibility that the 'alternative' interrogative LF in (29a) could have a satisfiable presupposition

(29) *Did John even eat the CAKE, or the CANDY?

   a.

$$whether$$
$$4$$
$$?$$
$$even_{f(pro_1)}$$
$$John \text{ ate the cake}_1{}^F$$
$$or_4$$
$$even_{f(pro_2)}$$
$$John \text{ ate the candy}_2{}^F$$
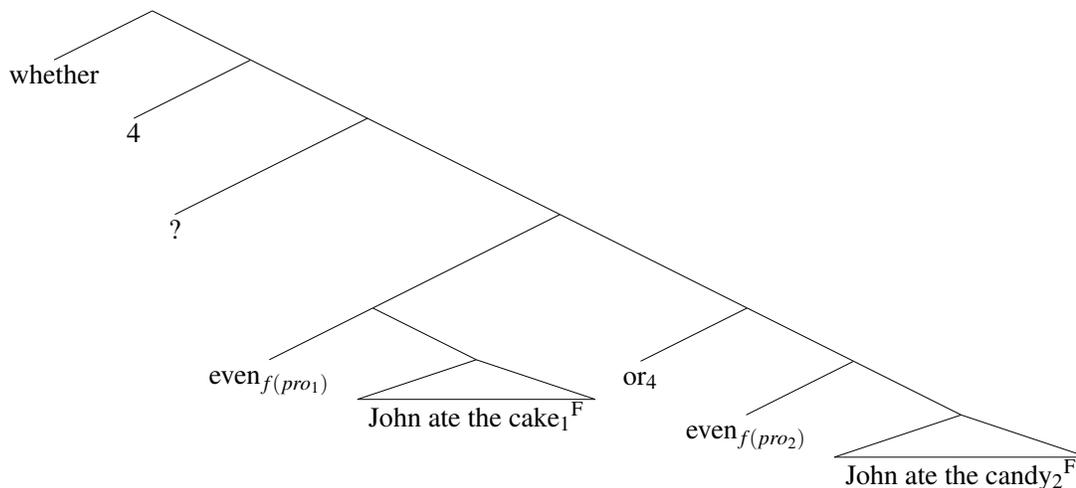
   b. $[\![f]\!]^{g,w} = \left\{ \begin{array}{l} 1 \rightarrow \{[\![\text{John ate the cake}]\!]^g_{\cancel{c}}, [\![\text{John ate the chips}]\!]^g_{\cancel{c}}\}, \\ 2 \rightarrow \{[\![\text{John ate the candy}]\!]^g_{\cancel{c}}, [\![\text{John ate the chips}]\!]^g_{\cancel{c}}\} \end{array} \right\}$

- $f(pro_1)$ and $f(pro_2)$ are not identical, hence (29a) is excluded by DU as well

3.2   Weakening Askability

- Askability amounts to a universal presupposition for questions with exactly two possible answers; however, it allows for some possible answers' presuppositions not to be satisfied when the question has more than two possible answers[3]

- Examples like (30) suggest interrogatives carry universal presuppositions (Abrusán 2014)

   (30)   Who among those ten boys does Mary regret that Bill invited?

- But B's response in (31) does not imply that every colleague has Australian relatives (Schwarz & Simonenko 2017), and the same goes for (32) with respect to Bill's beliefs

    (31)   A: Some of our colleagues brought their Australian relatives
            B: Which of our colleagues brought their Australian relatives?

    (32)   John believes that some of our colleagues brought their Australian relatives, and he's wondering which of our colleagues brought their Australian relatives

- According to proponents of the existential view, the pragmatics of asking gives the appearance of strengthened presuppositions (Guerzoni 2003; Schwarz & Simonenko 2017)

- Is Askability necessary, or can an existential presupposition explain the facts? An existential presupposition is essential for Guerzoni's (2004) analysis of the negatively-biased (33)

- Suppose that the common ground provides that the food options are the cake and the candy, that John loves the cake, and that he showed up without an appetite

    (33)   Did John even eat the CAKE?
            a.

---
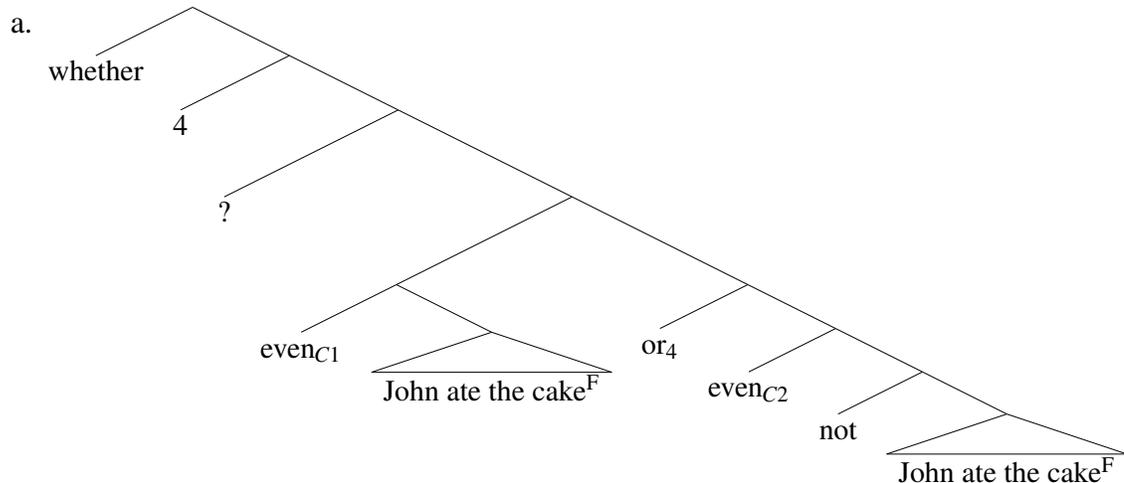
[3]As stated, Askability is a necessary rather than sufficient condition for asking a question, as evidenced by three-membered 'alternatives' like *Did John eat the CAKE, the CANDY, or the CHIPS?*.

- According to Guerzoni[4], the possible answers to the question have different, incompatible presuppositions; the affirmative presupposes that John eating the cake is least likely, while the negative presupposes that John eating the cake is most likely

- A bias arises towards the negative answer because only its presupposition is satisfied

- **Problems with the existential presupposition:** (34a) is expected to be acceptable, B's response in (34b) shouldn't be surprising, and (34c) is expected to cohere (Askability extends to attitudes)

  (34)   a. *Did John even eat the CAKE, or the CANDY?
          b. A: Did John eat the CAKE, or the CANDY?
             B: ?The cake – there was no candy
          c. #Mary thinks it's possible that there was no cake, but she's wondering whether John ate the CAKE or the CANDY

- If (34a) carries an existential presupposition, all it requires is for cake to be less likely than candy OR for candy to be less likely than cake; it is also expected to be biased

- Either we abandon Guerzoni's analysis of negative bias or we abandon Askability and find a way to explain (34a-c) using only an existential presupposition

3.3   Strengthening the meaning of *even*

- Many works assign *even* an additive presupposition in addition to the scalar one assumed above

  (35)   John even ate the CAKE
          a. Presupposes: John ate everything other than the cake, and the cake is the least likely thing for him to eat

- On the assumption that 'alternative' questions have at most one true answer, the additive presuppositions of each answer will contradict the requirement of *whether* that the question's extension be a singleton; the question is undefined in every world

- DU, an existential presupposition, and additivity rule out the 'alternative' question with *even* – but an existential presupposition still cannot explain (36a-b)

  (36)   a. A: Did John eat the CAKE, or the CANDY?
             B: ?The cake – there was no candy
          b. #Mary thinks it's possible that there was no cake, but she's wondering whether John ate the CAKE or the CANDY

---

[4]Our rendition of her proposal necessarily violates DU, but the original analysis in Guerzoni 2003, 2004, which did not involve ellipsis, does not.

4   Further consequences

4.1   Negatively-biased polar interrogatives

- (37) is a valid LF for the unbiased polar interrogative, but Askability precludes Guerzoni's analysis of negative bias; this reopens the question of how negative bias arises

  (37)   Did John even eat the CAKE?
  - a. LF: whether 4 [? [[even$_C$ [John ate the cake^F]] or$_4$ [not [even$_C$ [John ate the cake^F]]]]]

- Perhaps the negatively-biased reading arises when *even* takes scope above an interrogative speech act operator, ASK, whose output is a proposition of the form 'the speaker asks Q' (following Iatridou & Tatevosov 2016 on question-focusing *even*, Sauerland & Yatsushiro 2017 on remind-me readings of *again*; see also Krifka 2001 on pair-list readings)

  (38)   even$_C$ [ASK [whether 4 [? [[John ate the cake^F]] or$_4$ [not [John ate the cake^F]]]]]

- From this position, *even* triggers a presupposition that the speaker is less likely to ask the current question than to ask alternatives where the focus is replaced

- The same would extend to the negative bias of polar questions with minimizers, assuming they denote low endpoints of a scale associated with *even* (Borkin 1971, Heim 1984, Guerzoni 2004)

  (39)   even$_C$ [ASK [whether 4 [? [[John [lifted a finger]^F]] or$_4$ [not [John [lifted a finger]^F]]]]]

- These LFs would have to be paired with a pragmatic analysis of how bias arises, but nothing about them implies that *even* triggers a bias only when its associate is the low endpoint of a scale

- Modern Hebrew has at least two *even*-like particles that occur in interrogatives, *bixlal* and *afilu*; *bixlal* can associate with both low and high scalar endpoints and triggers a bias (negative and positive, respectively), whereas *afilu* can associate only with with high scalar endpoints and does not trigger a bias

  (40)   a. hem mekirim?   rega, hem bixlal   nesu'im?
            they acquainted? wait, they BIXLAL married?
            'Do they know each other? Wait, are they actually even married?'
         b. hem nesu'im? rega, hem bixlal   mekirim?
            they married? wait, they BIXLAL acquainted
            'Are they married? Wait, do they even know each other?'

  (41)   a. hem mekirim?   rega, hem afilu   nesu'im?
            they acquainted? wait, they AFILU married?
            'Do they know each other? Wait, are they even married?'
         b.#hem nesu'im? rega, hem afilu mekirim?
            they married? wait, they AFILU acquainted?

- *Bixlal* is also used in question-focussing constructions, as in (42) (Greenberg 2016b), analyzed by Iatridou & Tatevosov 2016 as involving high-scope *even*

  (42)   Let's meet at Oleana's
         a. ma   hem bixlal   / #afilu megishim?
            what they BIXLAL / AFILU serve
            'What do they even serve?'

- The use of a single particle, *bixlal*, for both question-focusing, extreme-ignorance readings and endpoint-focusing, biased readings suggests a closer connection than previous analyses afford

- On the other hand, the possibility of scoping *even* above ASK would make (43) a possible LF for **Did John even eat the CAKE, or the CANDY?*

  (43) $even_C$ [ASK [whether 4 [? [[John ate the cake^F]] or$_4$ [John ate the candy^F]]]]

- In a context where the food options are the cake, the candy, the chips, and the cookies and the speaker is less likely to ask about the cake or the candy than to ask about the chips or the cookies, the 'alternative' could be assigned the LF in (43) and have its presupposition satisfied

- Judgments about the question in this context are unclear; it remains to be seen whether (43) needs to be ruled out

4.2   Other disjunctions and disjunctive questions

- Karttunen 1973, Karttunen & Peters 1979 are concerned with the presuppositions of examples like (44a), for which a declarative version of Askability is not appropriate; the same goes for the interrogative in (44b) (cf. Krifka 2001, Szabolcsi 2016)

  (44)   a. Either Jack has no children or all of Jack's children are bald
         b. Does Jack have no children, or are all of his children bald?

- If (44b) were an 'alternative' question of the same variety as *Did John eat the CAKE, or the CANDY?*, it would have two possible answers

- Askability would require their presuppositions to be satisfied, making the question trivial (the presupposition contributed by *all of his children* resolves whether or not Jack has children); double-inversion suggests that this is a different sort of question, as confirmed by NPI licensing

  (45)   a.*Did John eat any CAKE, or any CANDY? (cf. Did John eat any cake?)
         b.*Did anyone eat the CAKE, or the CANDY? (cf. Did anyone eat the cake?)
                                                              (Higginbotham 1993)

  (46)   a. Did John eat any CAKE, or was he not hungry?
         b. Did anyone eat the CAKE, or was it left untouched?

10

- Whatever the right analysis of these questions is, we assume that they are not subject to Askability in a way that directly parallels the way that true 'alternative' interrogatives are

4.3   The scope of Domain Uniformity

- Given the examples in (47a-b) (repeated from above), it would be surprising if domain restriction in interrogatives were fundamentally different

(47)   a. Everyone is asleep and is being monitored by a research assistant
        b. The pig is grunting, but the pig with floppy ears is not grunting

- The non-contradictory interpretation of the possible answers to (48) suggests that restrictors for quantifiers within a question can vary

(48)   Is everyone asleep and being monitored by a research assistant?

- The non-elliptical interrogative in (49a) does allow for a reading where the quantifier's restrictor varies across answers (e.g. monitor the research subjects or greet the assistants), unlike (49b)

(49)   a. Did Mary MONITOR everyone, or GREET everyone?
        b. Is everyone asleep, or conducting an interview?

- Some speakers accept the use of the 'alternative' interrogatives in (50a-b) to determine which of two unlikely things has taken place

(50)   a. Did John even eat the CAKE, or even eat the CANDY?
        b. Did Mary even jump in the fountain, or John even win the race?

- We predict that to the extent that these examples are felicitous, the disjuncts can't be in each other's restrictors

- Identity is not enforced for the restrictors of *only* and *even* either, as in (51) (suppose we already know that John ate the cake, and he usually doesn't touch the candy)

(51)   Did John eat only the CAKE, or even the CANDY?

- That the cake answer negates the candy answer is derivable from *whether*, but we predict that 'even candy' answer doesn't necessarily imply 'less likely than cake'

- 'Alternative' interrogatives reveal the ellipsis-induced constraint on domain restrictors because disjunctive declaratives like (52) are always compatible with a non-elliptical parse

(52)   John even ate the cake or the candy

- Since VP- and DP-level 'alternative' interrogatives enforce ellipsis, they show that DU is tied to ellipsis and is not an independent constraint on domain restriction in interrogatives

4.4   Predictions of Askability

- Askability predicts a question to be infelicitous if it's known that only one of its possible answers' presuppositions are satisfied

    (53)   A: Some of our colleagues brought their Australian relatives.
           B: Which of our colleagues brought their Australian relatives?

    (54)   A: Only one of our colleagues has Australian relatives, and she brought them.
           B: #Which of our colleagues brought her Australian relatives?
           B': Who was it?

5   Conclusion

- Our analysis of the unacceptability of the 'alternative' interrogative with *even* depends on two constraints: DU and Askability

- DU requires an elided quantificational expression's restrictor to stay the same across possible answers, and Askability requires at least two possible answers' presuppositions to be satisfied

- Askability (which is independently supported by various judgments) implies that answer exclusion by presupposition failure is not a grammatically available option for producing a biased question, as proposed by Guerzoni

- We tentatively suggest a different approach to bias as arising from high-scope of *even*

References

Abrusán, Márta. 2014. *Weak Island Semantics*. Oxford: Oxford University Press.

Beaver, David I. 2001. *Presupposition and Assertion in Dynamic Semantics*. Stanford: CSLI Publications.

Biezma, María & Kyle Rawlins. 2012. Responding to alternative and polar questions. *Linguistics and Philosophy* 35. 361–406.

Borkin, Ann. 1971. Polarity items in questions. In *Chicago Linguistics Society* 7, 53–62. Chicago: Chicago Linguistics Society.

von Fintel, Kai. 1994. *Restrictions on Quantifier Domains*: University of Massachusetts at Amherst PhD Thesis.

Greenberg, Yael. 2016a. A novel problem for the likelihood-based semantics of *even*. *Semantics and Pragmatics* 9(2). 1–28.

Greenberg, Yael. 2016b. Typologies for *even*-like and *only*-like operators: Evidence from Modern Hebrew. Handout from ESSLLI 2016, Bolzano.

Greenberg, Yael. 2018. A revised, gradability-based semantics for even. *Natural Language Semantics* 26(1). 51–83.

Guerzoni, Elena. 2003. *Why Even Ask?: On the Pragmatics of Questions and the Semantics of Answers*: Massachusetts Institute of Technology PhD dissertation.

Guerzoni, Elena. 2004. *Even*-NPIs in yes/no questions. *Natural Language Semantics* 12(4). 319–343.

Guerzoni, Elena & Yael Sharvit. 2014. *Whether or not anything* but not *whether anything or not*. In Luka Crnič & Uli Sauerland (eds.), *The Art and Craft of Semantics: A Festschrift for Irene Heim* 1, 199–224. Cambridge: MIT Working Papers in Linguistics.

Han, Chung-hye & Maribel Romero. 2004. Disjunction, focus, and scope. *Linguistic Inquiry* 35(2). 179–217.

Heim, Irene. 1983. On the projection problem for presuppositions. In Daniel P. Flickinger Michael Barlow & Michael T. Wescoat (eds.), *West Coast Conference in Formal Linguistics* 2, 114–125. Stanford: Stanford University Press.

Heim, Irene. 1984. A note on polarity sensitivity and downward entailingness. In Charles Jones & Peter Sells (eds.), *North East Linguistics Society* 14, 98–107. Amherst, MA: GLSA Publications.

Heim, Irene. 1991. Artikel und definitheit. In Arnim von Stechow & Dieter Wunderlich (eds.), *Semantics: An International Handbook of Contemporary Research*, 487–535. Berlin: De Gruyter.

Higginbotham, James. 1993. Interrogatives. In Samuel Keyzer & Kenneth Hale (eds.), *The view from Building 20*, Cambridge, MA: The MIT Press.

Iatridou, Sabine & Sergei Tatevosov. 2016. Our even. *Linguistics and Philosophy* 39(4). 295–331.

Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic inquiry* 169–193.

Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1(1). 3–44.

Karttunen, Lauri & Stanley Peters. 1979. Conventional implicature. In Choon-Kyu Oh & David Dinneen (eds.), *Syntax and Semantics* 11, 1–56. New York: Academic Press.

Krifka, Manfred. 2001. Quantifying into question acts. *Natural Language Semantics* 9(1). 1–40.

Larson, Richard K. 1985. On the syntax of disjunction scope. *Natural Language & Linguistic Theory* 3(2). 217–264.

Lewis, David K. 1973. *Counterfactuals*. Cambridge, MA: Harvard University Press.

Nicolae, Andreea C. 2015. Questions with NPIs. *Natural Language Semantics* 23(1). 21–76.

Oshima, David Y. 2006. On factive islands: pragmatic anomaly vs. pragmatic infelicity. In T. Washio, K. Satoh, H. Takeda & A. Inokuchi (eds.), *Annual Conference of the Japanese Society for Artificial Intelligence*, 147–161. Berlin: Springer.

Rooth, Mats & Barbara Partee. 1982. Conjunction, type ambiguity and wide scope *or*. In Daniel P. Flickinger, Marcy Macken & Nancy Wiegand (eds.), *West Coast Conference in Formal Linguistics* 1, Stanford: Department of Linguistics, Stanford University.

Rullmann, Hotze & Sigrid Beck. 1998. Presupposition projection and the interpretation of *which* questions. *Semantics and Linguistic Theory* 8. 215–232.

Sauerland, Uli & Kazuko Yatsushiro. 2017. Remind-me presuppositions and speech-act decomposition: Evidence from particles in questions. *Linguistic Inquiry* 48(4). 651–678.

Schlenker, Philippe. 2008. Presupposition projection: Explanatory strategies. *Theoretical Linguistics* 34(3). 287–316.

Schwarz, Bernhard & Alexandra Simonenko. 2017. Decomposing universal projection in questions. *Sinn und Bedeutung* 22.

Soames, Scott. 1986. Incomplete definite descriptions. *Notre Dame Journal of Formal Logic* 27(3). 349–375.

Szabolcsi, Anna. 2016. Direct vs. indirect disjunction of wh-complements, as diagnosed by subordinating complementizers. Manuscript, NYU.

Westerståhl, Dag. 1985. Determiners and context sets. In Alice ter Meulen & Johan van Benthem (eds.), *Generalized Quantifiers in Natural Language*, 45–71. Dordrecht: Foris.

Wilkinson, Karina. 1996. The scope of *even*. *Natural Language Semantics* 4(3). 193–215.