

Who gives a damn about minimizers in questions?

Problem: Negative Polarity Items (NPIs) can appear in questions. A subset of NPIs, the minimizers like *lift a finger*, *give a damn*, *as much as a red cent*, force questions in which they appear to be interpreted with rhetorical force, (1) and (2). This talk is about the two questions (i) why minimizers are possible in questions and (ii) why they give rise obligatorily to rhetorical readings.

(1) Does Peter give a damn about the environment?

(2) Who gives a damn about the environment?

Background: Minimizers are semantically equivalent to expressions which denote the lower endpoint of a scale and contain *even* (Heim, 1984). This assumption is supported by the similar distribution of minimizers and of scalar endpoints + *even*. In particular, scalar endpoints + *even* give rise obligatorily to rhetorical readings in questions as well (Guerzoni, 2002), (3) and (4).

(3) Did you hear even the slightest noise?

(4) Which of these people has heard even the slightest noise?

Even will be treated uniformly (contra Rooth, 1985) as a truth-functionally inert, focus-sensitive element with two presuppositions ((5) from Wilkinson, 1996). *Even* contributes a scalar presupposition (5i): The asserted proposition must be the least likely of a set of contextually provided alternatives. *Even* also contributes an existential presupposition (5ii): At least one of those alternatives must actually be true.

(5) $[[\text{even}]] = \lambda p_{\langle s, t \rangle} \lambda w_{\langle s \rangle}:$

(i) $\forall q_{\langle s, t \rangle} [[q \in C \ \& \ q \neq p] \rightarrow q \text{ >likely } p] \ \&$

Scalar Presupposition

(ii) $\exists q_{\langle s, t \rangle} [q \in C \ \& \ q \neq p \ \& \ q(w)].$

Existential Presupposition

(iii) $p(w)$

Assertion

The variable C will play the key role later on. C is a set of propositions, is an implicit contextual variable. C being implicit, a cooperative hearer must assign C a value which will make a given utterance informative, relevant, etc. The value of C is usually assumed to be a subset of the focus semantic value of the LF-sister of *even*, (6). The LF-sister of *even* must be propositional.

(6) Let α be the sister of *even* at LF, $[[\alpha]]^f$ be the focus semantic value of α , and C the contextual restriction on *even*, then $C \subseteq [[\alpha]]^f$.

As shown in Krifka (1995) and Lahiri (1998), Ladusaw's (1980) generalization that NPIs require downward entailing contexts follows from the above assumptions. However, this still fails to explain why minimizers can appear in questions (as Lahiri, 1998; Wilkinson, 1996 acknowledge) or why they give rise to the rhetorical effect.

Solution: At LF *even* must take clausal scope (its sister must be of type $\langle s, t \rangle$) below the interrogative operator (since questions are of type $\langle \langle s, t \rangle, t \rangle$ (Hamblin, 1973)), see (7).

(7) LF for (1): $[Q [\text{even}_C [\text{Peter cares to the } [\text{minimal}]_F \text{ degree about the environment}]]]$

I now propose to allow one additional element to be allowed to enter into the construction of C: the negation of the disjunction of all the alternatives in $[[\alpha]]^f$ as stated in (8) (cf. Karttunen, 1977: 18 ft. 11 for a similar move regarding questions). Informally then, (8) means that in (1) the proposition *that Peter doesn't care about the environment* may enter into the construction of C.

(8) Let α be the sister of *even* at LF, $[[\alpha]]^f$ be the focus semantic value of α , W the set of possible worlds, and C the contextual restriction on *even*, then $C \subseteq (([\alpha]]^f \cup \{W - \cup[[\alpha]]^f\})$.

The only value for C able to satisfy both (5i) and (5ii) is $C = \{[\alpha]^o, W - \cup[[\alpha]]^f\}$ ($[\alpha]^o \in C$ isn't crucial). The reason is given in this and the next paragraph. Crucially, no member of $[[\alpha]]^f \setminus [\alpha]^o$ may be a member of C. All members of $[[\alpha]]^f \setminus [\alpha]^o$ are propositions of the form *that Peter cares to degree x about the environment*, where x is not the minimal degree. All members of $[[\alpha]]^f \setminus [\alpha]^o$

furthermore asymmetrically entail $[\alpha]^0$; if Peter, for example, cares to a large degree about the environment, then he also cares about the environment to the minimal degree. Thus, all members of $[\alpha]^f \setminus [\alpha]^0$ are less likely than $[\alpha]^0$ in violation of the scalar presupposition (5i) (Lahiri, 1998).

Since C must be non-trivial by (5ii), it must necessarily contain $W - \cup[\alpha]^f$ (*that Peter doesn't care about the environment*). Furthermore, this proposition must be true, again by (5ii). Thus far the reasoning would be identical if we had looked at the declarative version (9) of (1). For (9) the only allowed value for $C = \{[\alpha]^0, W - \cup[\alpha]^f\}$. In the declarative case this leads to a contradiction, since the presupposition *that Peter doesn't care about the environment* contradicts the assertion. (9) # Peter gives a damn about the environment.

The denotation of a *yes/no*-question on the other hand has two members: the proposition expressed in the question and its negation. The presuppositions of the sister of Q are projected to the individual members of the question. Thus (7) denotes the set of propositions in (10), both of which presuppose that Peter doesn't care about the environment and that Peter is unlikely to care about the environment.

- (10i) { that Peter cares to the minimal degree about the environment,
 (10ii) that Peter does not care to the minimal degree about the environment }

The proposition (10i) contradicts its presupposition. It is therefore not a possible answer to (1). This leaves the non-contradictory (10ii) as the only possible answer. This explains the rhetorical effect: (1) is formally a question, but it allows for only one value of C ($C = \{[\alpha]^0, W - \cup[\alpha]^f\}$) and, given this value for C, it allows only one answer, the negative answer (10ii).

Example (2), with LF and partial translation (11), is similar. As before, the only possible value for C is $\{[\alpha]^0, W - \cup[\alpha]^f\}$. The denotation of (2) is sketched in (12), where (12i-iii) presuppose respectively that Peter, John, and Mary don't care about the environment and are unlikely to care about it. All members of (12) are contradictory; no context makes them true. Thus, the true subset of (12) is empty: Nobody in D_{who} cares about the environment. This is the reading (2) has.

- (11) [Who₁ Q [even [t₁ cares to the [minimal]_F degree about the environment]]]
 (12i) { that Peter cares to the minimal degree about the environment,
 (12ii) that John cares to the minimal degree about the environment,
 (12iii) that Mary cares to the minimal degree about the environment, ... }

As shown above, the declarative form of (1), (9) above, is ill-formed because it is equivalent to the contradictory (10i). For the negation of (9) (*Peter doesn't give a damn about the environment*) I assume that *even* takes scope above negation (Wilkinson, 1996), which then allows C to take on a range of different values (Lahiri, 1998). There is no rhetorical effect since the choice of C is not forced as in (1) and (2). Other environments are similar; assigning C the value $C = \{[\alpha]^0, W - \cup[\alpha]^f\}$ either leads to contradiction or is benign, because the choice is not forced. This accounts for the fact that the rhetorical effect is limited to questions.

The current proposal extends to (13). In (13) (2) is used as an embedded question with the presupposition as above: *That all $x \in D_{\text{who}}$ are more likely not to care about the environment than to care about it*. This presupposition is denied explicitly in (13); hence, (13) is degraded. No alternative account of the rhetorical effect (Guerzoni, 2002; Han, 2002), in fact no account based on (6), could capture (13).

- (13) #John believes that people are more likely to care about the environment than not to care about it, and he is wondering who gives a damn about the environment.

I have derived the rhetorical effect of minimizers in questions from (8), which is independently supported by (13).