On the QuD-dependence of conditionals

Adèle Hénot-Mortier (MIT)

MIT Linguistics

Which QuDs can conditionals answer?

Data. von Fintel (2001) noted that conditionals can answer different Questions under Discussion (**QuD**, Roberts, 1996). For instance, (1) out-of-the-blue preferentially addresses a QuD like (2a) targeting its consequent. But (1) may also be used to give some hint about the truth of its antecedent. This tends to require a special context, e.g. an overt question like (2b). **How to formally relate (1) to those possible QuDs?**

(1) If Jo is French he likes wine. F→ W

(2) a. What does Jo like? (Consequent-centric)
    b. Where is Jo from? (Antecedent-centric)

Additionally, (1) can answer a conditional questions like (3a), but not (3b)–suggesting the form of the conditional question and that of the conditional must match.

(3) a. If Jo is French, what does he like?
    b. # If Jo likes wine, where is he from?

Lastly, in disjunctions/conjunctions of conditionals, antecedents/consequents must answer the same question.

(4) If Jo is French he likes wine, **or/but** if he's German he likes beer. (F→W) ∘ (G→B)

(5) # If Jo is French he likes wine, **or/but** if he doesn't like beer he isn't German. (F→W) ∘ (¬B→¬G)

(6) ?? If Jo is French he likes wine, **or/but** if he likes beer he is German. (F→W) ∘ (B→G)

Assuming that such structures answer one single question (Simons, 2001; Zhang, 2024), this implies that "shifting" from a consequent-centric to an antecedent-centric question cannot locally target one disjunct or conjunct.

Upshot. We suggest that the pairing between questions and conditionals can be derived by representing conditional QuDs as recursive partitions, i.e. trees whose nodes are sets of worlds. For a question-sentence pairing to be felicitous, **there must be a way to update the Context Set (CS, Stalnaker, 1974) to make the overt question be contained in the one that the sentence independently conveys.**

Conditional question trees

Building on Büring (2003), Ippolito (2019), Onea (2019), Riester (2019), and Zhang (2024), Hénot-Mortier, 2024a, 2024b proposed a model to compositionally derive, from a Logical Form (**LF**), the QuDs this LF can address. QuDs are seen as trees, more specifically, *parse trees* of the CS, called **Qtrees**:

- whose nodes are sets of worlds (the root being typically the whole CS);
- whose intermediate nodes are all partitioned by the set of their children.

In such trees, leaves partition the root (standard denotation of a question, Hamblin, 1973; Groenendijk, 1999). Any set of same-level nodes exhaustively dominated by a higher node N can be seen as a question for which N is taken for granted.

Q-trees for simplex LFs corresponding to the antecedent (F) and consequent (W) of (1) are given in Fig. 1 and 2. They are obtained by identifying the leaves of the tree with the Hamblin partition generated by focus alternatives to the prejacent. Leaves entailing the prejacent are "flagged" as **verifying**.

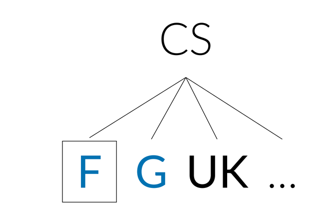

Fig. 1. Qtree for F.

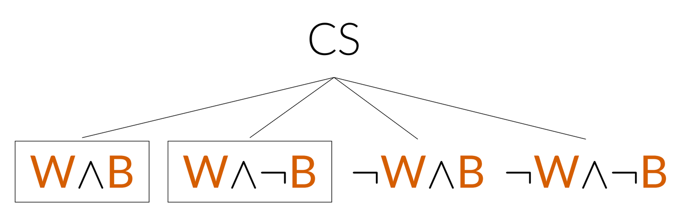

Fig. 2. Qtree for W.

QuDs for conditional LFs (*if A then C*) are derived by:

- Deriving a Q-tree T_C for C an a Q-tree T_A for A;
- Replacing any leaf of T_A where A holds by its intersection (~recursive conjunction) with T_C.
- Verifying nodes are inherited from T_C.

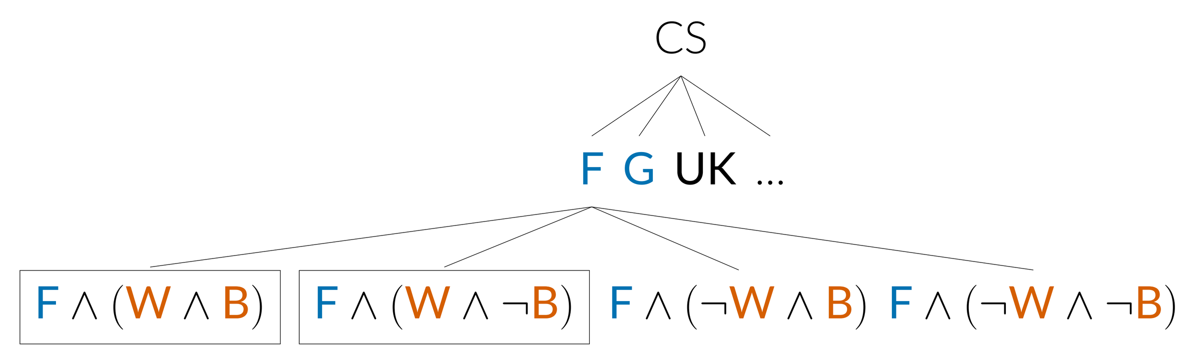

Fig. 3. Qtree for (1)=F→W, with T_A/T_C taken from Fig. 1/2.

Felicitously addressing overt QuDs

Under the standard view, a QuD Q is felicitously *answered* if the denotation answer identifies *some* cells of Q, loosely or exactly (Križ & Spector, 2020; Lewis, 1988; Roberts, 1996). But this does not explain why (1) can be seen to somehow *address* the questions in (2). The following question sequences also raise this issue:

(7) a. –What does Jo like? –Well where is Jo from?
    b. –Where is Jo from? –Well what does Jo like?

Intuitively, answering the follow-up question helps answer the original one, by creating a more complex QuD with two layers (where>what in (7a), what>where in (7b)). We argue that Q-A pairs like (2a)-(1) and (2b)-(1) do that too: the conditional does not properly answer the question, but provides a strategy to do so, in the form of a chain of questions.

(8) **Felicitous addressing of a QuD.** An LF X felicitously addresses an overt QuD Q, if there is a way to restrict the CS, s.t. Q defined on this CS is contained (nodes+edges) in the QuD evoked by X.

(2a)-(1): Q amounts to Fig. 2, and A, to Fig. 3. By restricting the CS of Fig. 2 to the F-worlds, one obtains Fig. 4, i.e., the subtree of Fig. 3 rooted in F. So (8)✓.
(2a)-(1): Q amounts to Fig. 1, which corresponds to the first layer of Fig. 3, so (8)✓.
(3a)-(1): Q is a conditional question and so may directly denote Fig. 4, which corresponds to the the subtree of Fig. 3 rooted in F, so (8)✓.
(3b)-(1): Q may denote Fig. 1 where the CS is intersected with W–which does *not* correspond to any subtree of Fig. 3. So (8)✗. Additionally, we take that (3b) cannot be addressed by (1) *via* perfection (W→F) due to the backgrounded status of this kind of inference.

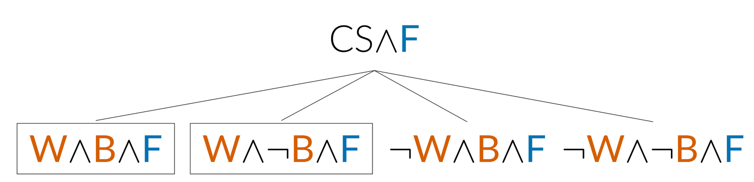

Fig. 4. Qtree for W restricted to the F-worlds.

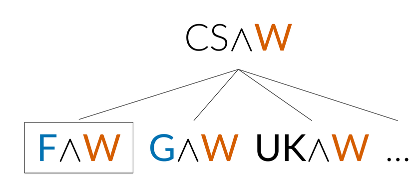

Fig. 5. Qtree for F restricted to the W-worlds.

Combinations of conditionals

(8) constrains QA pairs by trying to "fit" the overt question into the QuD evoked by the answer. It does not transform the evoked QuD into something else. This approach is useful to derive "QuD-connectivity" effects in (4-6). Assuming *or*/*but* union Qtrees (Hénot-Mortier, 2024a, 2024b; Zhang, 2024), (4) is the only sentence which can evoke a well-formed Qtree, given in Fig. 6.

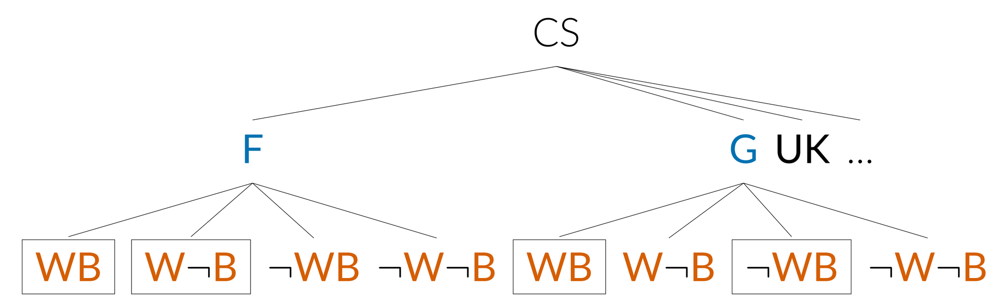

Fig. 6. Qtree for (4)=F→W∘G→B. Nodes are abbreviated.

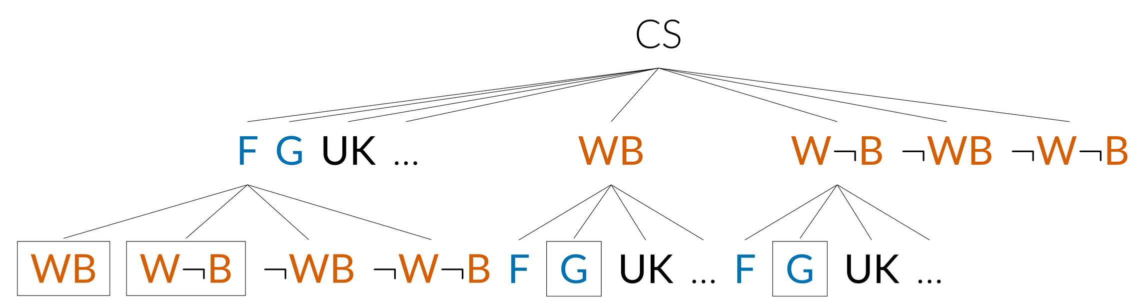

Fig. 7. **Ill-formed** Qtree for (6)=F→W∘B→G.

Had we assumed that QA pairs were judged felicitous by locally coercing the QuD of A into Q, then, (5-4) may have been incorrectly rescued. Instead, we predict (5-4) to be ill-formed regardless of Q. (4), just like (1), addresses (2a), (2b), (3a), but not (3b). It also addresses (9).

(9) If Jo is German, what does he like?

Conclusion and outlook

We sketched a theory of how conditionals can *address* various questions without directly answering them. We did so by assuming that addressing a question amounts to providing a strategy of inquiry including the (restricted) question. Further questions! Why is (2b) harder to accommodate from (1) out-of-the-blue (hunch: the overt question should form the bottom of the tree). Why is (6) better than (5). How do sentences compete in addressing questions (hunch: redundancy is at play).

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mortier@mit.edu

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