On the QuD-dependence of conditionals

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Research question

Puzzle. As noted in (von Fintel, 2001), conditionals can answer different Questions under Discussion (**QuD**, Roberts, 2012). We will focus here on a small subset of those possible QuDs and use (1) as a working example. This conditional preferentially provides a partial answer to a question targeting its consequent (see (2a)), granted its antecedent. But (1) could also be used to give some hint about the truth of its antecedent itself (see (2b)). This however requires a context where whether Mary likes baguette can be easily settled. **How to formally relate (1) to those possible QuDs?**

(1) If Mary is French she likes baguette.

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

Upshot. **We suggest that both QuDs can be derived from a general representation of a conditional QuD in the form of a tree whose nodes correspond to sets of worlds.** The consequent-centric QuD (2a) is derived by simplifying the conditional QuD-tree from the top-down, while the antecedent-centric QuD (2b) is derived by a bottom-up simplification.

Formal machinery

Building on previous work by Hénot-Mortier (forthcoming-a, forthcoming-b), Onea (2019), Riester (2019), and Zhang (forthcoming), we propose a model to compositionally derive, from a Logical Form (**LF**), the QuDs this LF can address. Following the insights of Büring (2003), we model QuDs as trees, more specifically, *parse trees* of the Context Set (**CS**, Stalnaker, 1974):

- whose nodes denote sets of worlds;
- whose root denotes the CS;
- whose intermediate nodes are all partitioned by the set of their children.

In such trees ("**Q-trees**"):

★ Any set of same-level nodes covering the CS can be seen as the "traditional" denotation of a question in the sense of Hamblin (1973).

♡ Any set of same-level nodes exhaustively dominated by a higher node N can be seen as the "traditional" denotation of a *conditional* question, taking the proposition N denotes for granted.

Conditional Q-trees

Simplex case. Q-trees for simplex LFs (corresponding to the antecedent and consequent of (1)) are given in Fig. 1 and 2. They are obtained by:

- Deriving a set of focus alternatives $\mathcal{A}_p$ to the prejacent proposition p (*via* substitution within its LF, Rooth, 1992);
- Creating a partition by grouping together worlds of the CS that agree on all the propositions in $\mathcal{A}_p$ (Hamblin, 1973);
- Identifying this partition to the leaves of the Q-tree for p.

Fig. 1. A question-tree (Q-tree) a sentence like p=*Mary lives in France* could be the answer to. Boxed leaves are sets of worlds where p holds.

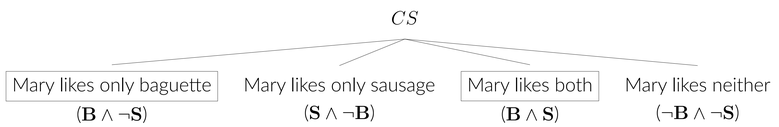


Fig. 2. A question-tree (Q-tree) a sentence like *p=Mary likes baguette* could be the answer to, assuming it's known that Mary may like only two things in the context: baguette or sausage.

Conditional case. QuDs corresponding to *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.

Fig. 3 shows a Q-tree for (1) derived by this process (with T_A/T_C in Fig. 1/2).

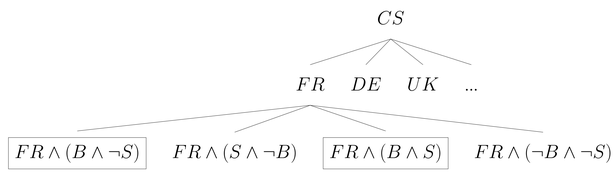


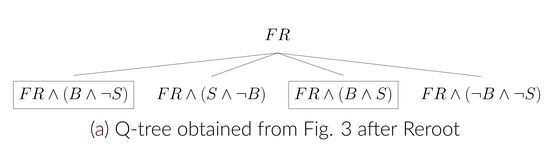
Fig. 3. A question-tree (Q-tree) a sentence like (1) could be the answer to.

Deriving QuD-dependence

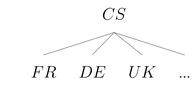
We propose that (1) is relevant to questions (2a) & (2b) *via* some modification of the Q-tree in Fig. 3. We posit two operations:

- **Reroot**: trim the Q-tree from **top down** by inductively replacing its root by one of its daughters. Amounts to focusing on a question in a more restricted CS (="local question").
- **Refocus**: trim the Q-tree from **bottom up** by homogeneously deleting leaves (i.e. if ℓ gets deleted, all of ℓ's siblings get deleted too). Amounts to treating a local question as irrelevant to the conversation (because it can be easily settled, because it is too fine-grained...).

Applying those operations to tree 3 yields the trees in Fig. 4. Tree 4a can be mapped to question (2a) (as per ♡) and tree 4b to question (2b) (as per ★).



(a) Q-tree obtained from Fig. 3 after Reroot



(b) Q-tree obtained from Fig. 3 after Refocus

Fig. 4. Applying the two coercion operations to Q-tree 3

Conclusion & Outlook

We sketched a compositional machinery linking assertions to potential QuDs, accounting for certain conditions of use of conditionals. To explore:

- **Interaction between Q-trees and presuppositions:** how to make sure Refocus does not derive QuDs dealing with backgrounded material (Heim, 2015)? Hunch: presuppositions don't create branching, but instead are recursively intersected with the Q-tree generated by the assertion.
- **Disjunctions/conjunctions of 2 conditionals:** how to account for the fact antecedents and consequents are respectively linked to similar QuDs? Hunch: disjunction/conjunction "fuse" Q-trees, imposing QuD-connectivity between antecedents and consequents (Simons, 2001; Zhang, forthcoming).
- **Concessive uses of "bare" conditionals:** how, in languages such as French, *If Marie is French she doesn't like baguette* can mean *Mary is French yet doesn't like baguette*? Hunch: the plausibility of the consequent given the antecedent influences the application of Q-tree coercion operations.

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