Counterfactuals, Correlatives, and Disjunctive Antecedents.

A. The Problem.   In a minimal change semantics, counterfactuals are evaluated by checking whether the consequent is true in the maximally similar worlds where the antecedent is (Stalnaker, 1968; Lewis, 1973). Counterfactuals with disjunctive antecedents naturally convey that the consequent holds in the maximally similar worlds in each disjunct. The one in (1), for instance, conveys that both (1a) and (1b) are true.

This interpretation of (1), however, is unexpected under the standard semantics of *or*, since the maximally similar worlds in the union of the set of worlds where we have good weather and the set of worlds where the sun grows cold are all worlds where we have good weather (Nute, 1984).

B. The Proposal.   Recent work on the semantics and pragmatics of disjunction highlights the need for the pragmatics to entertain each of the terms of a disjunction as an alternative to the whole disjunction (Sauerland 2004, Fox 2006). I show that the natural interpretation of disjunctive counterfactuals is expected if (i) a semantics for disjunctions is assumed that makes each disjunct visible to the interpretation system (Alonso-Ovalle, 2006), and (ii) counterfactuals are treated as correlative constructions (von Fintel 1994; Bhatt, 2001; Schlenker, 2001).

In an alternative semantics, the disjunction in (1) denotes the set of propositions in (2a), which allows each disjunct to remain visible on its own to the semantics. As in other analyses of conditionals as correlatives, I analyze the consequent as containing a hidden propositional anaphor (2b). The denotation of the *if*-clause can then quantify universally over the variable in the consequent (3), much as the antecedent of a correlative quantifies universally over the consequent (4) (Dayal, 1996:192).

The universal quantification over propositional alternatives makes the right predictions when embedded under negation, as shown by the consistency of the discourse in (5).

C. Alternatives to (B).   The problem in (A) has been used to argue against a minimal change semantics for counterfactuals building on the observation that, although counterfactuals do not seem to license downward monotone inferences, as illustrated in (6a), they nevertheless license NPIs in their antecedents (7a), which suggests that they might be, after all, downward entailing (Herbuger and Mauck, 2006). If, despite *prima facie* evidence, counterfactuals are downward entailing, the inference pattern illustrated in (1) is expected under the standard analysis of *or* (see (7b)).

As (8) illustrates, however, the inference pattern in (1) also obtains with *might* counterfactuals. But if *might* counterfactuals are the duals of *would* counterfactuals, they are not downward entailing. Assuming that *might* counterfactuals are *would* counterfactuals embedded under epistemic *might* (Stalnaker, 1984) does not help much: the problem in (A) extends to other types of conditionals, like the deontic conditional in (9), if an ordering semantics is assumed (suppose that the worlds where Sandy does her homework are closer to the deontic ideal than the worlds where she burns the carpet). The deontic possibility conditional in (9) cannot be analyzed as a deontic necessity conditional embedded under epistemic *might*: the conditionals in (10) are not equivalent.

(1) If we had had good weather this summer or the sun had grown cold, we would have had a bumper crop. (Inspired by Nute 1975) — (1a) If we had had good weather this summer, we would have had a bumper crop. — (1b) If the sun had grown cold, we would have a bumper crop.

(2) a. {that we had good weather this summer, that the sun grew cold}

b. would [$p_{\langle s,t \rangle}$] [have a bumper crop]

(3) $\lambda f_{\langle \langle s,t \rangle, \langle s,t \rangle \rangle}.\lambda w.\forall p[p \in (2a) \rightarrow f(p)(w)]$

(4) a. jo   laRkiyaaN khaRii   haiN   ve   lambii haiN
    which girls   standing be-PR they tall   be-PR

    'Which girls are standing, they are tall.'   (Dayal, 1996:192)

b. $\lambda P_{\langle e,t \rangle}.\forall x[(\mathbf{girl}(x) \,\&\, \mathbf{stand}(x)) \rightarrow P(x)]$

(5) It's plain false that Hitler would have been pleased if Spain had joined Germany or the U.S. There is enough evidence showing that he might have objected to Spain joining the U.S. If she had joined Germany, he would have been pleased, of course. (A. Kratzer, based on an example by Donald Nute).

(6) a. If kangaroos had no tails, they would topple over. — If kangaroos had no tails but used clutches, they would topple over (Lewis, 1973:1).

(7) a. If you had left any earlier, you would have missed the plane.   (von Fintel, 1999:33)

b. $((p \vee q) \rightarrow r) \rightarrow (p \rightarrow r) \wedge (q \rightarrow r)$

(8) # If we had had good weather this summer or the sun had grown cold, we might have had a bumper crop, but if the sun had grown cold, we wouldn't have a bumper crop. (Inspired by Nute, 1975).

(9) # If Sandy does her homework or burns the carpet, she may eat ice cream, but if she burns the carpet, she may not eat ice cream.

(10) a. If Sandy does her homework, she may eat ice cream.

b. It might be true that if Sandy does her homework, she must eat ice cream.

References

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