Counterfactuals Reading

Sider, 2010

Sider, T. (2010) Logic for Philosophy. pp. 279-281.

- Lewis disputes Stalnaker's assumption of antisymmetry (more precisely, Stalnaker's construction of an antisymmetric nearness relation). The simple thought is that, in general, two things can be equally similar to one other thing, so there seems to be no reason to think that two possible worlds could not be equally near to one other possible world.
- Lewis objects to the assumption of antisymmetry on metaphysical grounds. If the truth of a natural language counterfactual does in fact depend on some nearness relation, then simply because there could be equally near possible worlds, the assumption of antisymmetry is inappropriate for natural language counterfactuals.
- Conditional excluded middle $(\phi \mathrel{\square\!\!\rightarrow} \psi) \vee (\phi \mathrel{\square\!\!\rightarrow} \neg\psi)$ and distribution $[\phi \mathrel{\square\!\!\rightarrow} (\psi \vee \chi)] \rightarrow [(\phi \mathrel{\square\!\!\rightarrow} \psi) \vee (\phi \mathrel{\square\!\!\rightarrow} \chi)]$ are valid under Stalnaker's semantics but not under Lewis's.
- Both conditional excluded middle and distribution appear plausible.
  - An equivalent formulation (that simply deconstructs $\vee$ into $\neg$ and $\rightarrow$) of conditional excluded middle is $\neg(\phi \mathrel{\square\!\!\rightarrow} \psi) \rightarrow (\phi \mathrel{\square\!\!\rightarrow} \neg\psi)$. Where ϕ is possibly true, the converse, $(\phi \mathrel{\square\!\!\rightarrow} \neg\psi) \rightarrow \neg(\phi \mathrel{\square\!\!\rightarrow} \psi)$ is uncontroversially true. So if conditional excluded middle is valid, then where ϕ is possibly true, $\neg(\phi \mathrel{\square\!\!\rightarrow} \psi)$ and $\phi \mathrel{\square\!\!\rightarrow} \neg\psi$ are logically equivalent. We indeed treat the English analogues as logically equivalent. For example, we do not distinguish between "it's not true that if she had played she would have won" and "if she had played she would not have won".
  - If someone says "if I had been a baseball player, I would have been either a third-baseman or a shortstop", it seems natural to reply "well which would you have been?" This reply seems to presuppose that either (1) if this person had been a baseball player, he would have been a third-baseman, or (2) if this person had been a baseball player he would have been a shortstop.
  - Lewis offers the following counterexample to conditional excluded middle. "It is not the case that if Bizet and Verdi were compatriots, Bizet would be an Italian; and it is not the case that if Bizet and Verdi were compatriots, Bizet would not be an Italian; nevertheless, if Bizet and Verdi were compatriots, Bizet either would or would not be Italian."
  - Lewis would think that in the baseball case, the potential baseball player neither would have been a third-baseman if he had been a baseball player, nor would have been a shortstop if he had been a baseball player, but might have been either. "Neither outcome would have resulted; each outcome might have."
    - It would make sense for the potential baseball player to reply as above, saying "it's neither that I would have been a third-baseman, nor that I would have been a shortstop, but I might have been either". The question does not presuppose either (1) or (2), because it makes sense to ask the question even if one anticipates the response "I would have been one of the two for sure, but it could really be either one".
- Lewis objects to Stalnaker's assumption of antisymmetry on the ground that Stalnaker's semantics then cannot make sense of the might counterfactual defined as follows. "$\phi \mathrel{\diamond\!\!\rightarrow} \psi$" abbreviates "$\neg(\phi \mathrel{\square\!\!\rightarrow} \psi)$". The might counterfactual and the would counterfactual are equivalent in Stalnaker's semantics, and there seems to be no other plausible definition of the might counterfactual in Stalnaker's semantics.
- Lewis objects to Stalnaker's limit assumption (that if some ϕ-world exists, then for every world w, there exists a w-closest ϕ-world).
  - "If the line had been longer than one inch, it would have been one hundred miles long." Is intuitively false but true under Stalnaker's semantics because there is apparently no closest "longer than one inch"-world to the actual world.
  - There are apparently cases of ever-w-closer ϕ worlds with no end, which the limit assumption denies (or "assumes away").

Lewis, 2000

Lewis, D. (2000) Counterfactuals. London, England: Blackwell. pp. 77-83.

- "The principal virtue and the principal vice of Stalnaker's theory is that it makes valid the law of conditional excluded middle."
  - The law of conditional excluded middle is plausible because in natural language we do not distinguish between $\phi \mathrel{\square\!\!\rightarrow} \neg\psi$ and $\neg(\phi \mathrel{\square\!\!\rightarrow} \psi)$ except in vacuous cases (where ϕ is impossible). The left-to-right inference is uncontroversial, and the right-to-left inference follows from conditional excluded middle.
  - Lewis's theory accommodates the truth of the Bizet and Verdi statement.

- "Another manifestation of Stalnaker's [antisymmetry] Assumption is that, except in the vacuous case, the difference between 'would' and 'might' counterfactuals is lost." This is a consequence of conditional excluded middle. "But surely English 'would' and 'might' counterfactuals do sometimes differ in truth value, and not only in the vacuous case."
  - Lewis offers four candidate formalisations of "If I had looked in my pocket, I might have found a penny" in Stalnaker's semantics. These are $\diamond(\phi \wedge \psi)$, $\diamond(\phi \boxright \psi)$, $\phi \boxright \diamond\psi$ and $\phi \boxright \diamond(\phi \wedge \psi)$. Suppose that it is not true that I looked in my pocket, and there is no penny to be found. Then the given sentence is false but all candidate formalisations evaluate as true.

Stalnaker, 1985

Stalnaker, R. C. (1985) Inquiry. London, England: MIT Press. pp. 119-146.

- Stalnaker concedes that the asymmetry assumption is "a grossly implausible assumption to make about the kind of similarity relation we use to interpret [English counterfactual] conditionals." In other words, it is unrealistic to assume that, in evaluating English counterfactual conditionals, we can and do construct or at least rely on an antisymmetric nearness relation.
- But, Stalnaker maintains, the asymmetry assumption is defensible as an "idealising assumption", akin to the assumptions (made in other languages of logic or semantic theories) that domains, sets of possible worlds, and predicates are assumed to have sharp boundaries, even though in natural language there are borderline cases. In other words, in English, the domains of discourse are vague, and there are borderline cases, yet it does not trouble us that in, for example, first-order predicate logic, the domain of discourse is treated as well-defined. That Stalnaker's logic of counterfactuals is determinate while there are cases of indeterminacy in reality, is an instance of the general problem of the vagueness of natural language ("pervasive semantic underdetermination in natural language"), rather than a fault of Stalnaker's antisymmetry assumption.
- According to Stalnaker, it is possible to maintain that the "selection functions" and nearness relations used in evaluating natural language counterfactuals admit ties and incomparabilities without rejecting Stalnaker's logic of counterfactuals as a semantic theory. This requires a theory of vagueness, and Stalnaker favours applying the method of supervaluations to Stalnaker's logic of counterfactuals. This is not ad hoc because any semantic theory will require an account of indeterminacy "to account for pervasive semantic underdetermination in natural language" of the types given above.
- Stalnaker applies this response to some of the cases Lewis presents.
  - Stalnaker agrees with Lewis and Quine in thinking that "worlds in which Bizet and Verdi are both French or both Italian [...] are more like the actual world than worlds in which both are Argentinian or Japanese. But there is no apparent reason to favour a world in which both are French over one in which both are Italian, or vice versa."
  - Where Stalnaker diverges from Lewis is in thinking that the counterfactual conditional "If Bizet and Verdi had been compatriots, Bizet would have been Italian" is indeterminate, neither true nor false, rather than flatly false, as Lewis thinks. Stalnaker's conclusion seems more natural, "most speakers would be as hesitant to deny as to affirm either of the conditionals".
- Lewis remained reluctant to accept Stalnaker's solution for two reasons. First, this solution continues to rely on the Limit Assumption. Second, "the revised version still gives us no 'might' counterfactual."
- If the limit assumption fails, "any selection function would be forced to choose worlds which were less similar to the actual world than other eligible worlds. This is why the supervaluation method does not provide a way to avoid making the limit assumption."
  - Stalnaker's response is apparently that Stalnaker treats the selection function as primitive and the nearness relation as induced by or inferred from the selection function, so the assumption that some "nearest" world exists is not arbitrary but implied by the way the nearness relation is constructed.
  - "To the extent that an intuitive notion of similarity among possible worlds plays a role, it is a device used for the purpose of selecting possible worlds [so] it is not unreasonable to require that the way respects of similarity are weighed should be such as to make selection possible."
  - Even if the selection function is taken as primitive, an independently understood concept of nearness is necessary "to describe the intuitive basis on which the selection is made". The intuitive rule of selecting a world that makes a minimal change to the actual world such that the antecedent is true is not workable because no such world need exist. Instead, Stalnaker favours the intuitive rule of selecting a world that makes a minimal change **in relevant respects** to the actual world, such that the antecedent is true. This solves the problem posed by Lewis's one inch line.
- According to Lewis, ordinary counterfactuals "express a kind of variable necessity on the consequent" whereas might counterfactuals express a kind of variable possibility. On Lewis's definition of the might conditional, under Stalnaker's semantics, the might conditional is equivalent to the would conditional.

- Stalnaker notes that "Lewis's definition treats the apparently complex construction, if ... might, as an idiom which cannot be explained in terms of the meanings of if and might. This is not a serious defect, but it would be less ad hoc to explain the construction in terms of its parts.
- "Might" appears to generally express epistemic possibility, although it sometimes expresses nonepistemic possibility.
- "The scope of might, when it occurs in conditional contexts, is normally the whole conditional and not just the consequent. This claim may seem ad hoc, since the surface form of English sentences such as 'if John had been invited, he might have come to the party' certainly suggests that the antecedent is outside the scope of might. But there are parallel constructions where the wide scope analysis is uncontroversial. For example, 'if he is a bachelor, he must be unmarried'. Also, the wide scope interpretation is supported by the fact that might conditionals can be paraphrased with the might preceding the antecedent."
- Stalnaker responds to the Lewis Penny case as follows. Stalnaker would formalise the might conditional as $\diamond(\phi \mathrel{\square\!\!\rightarrow} \psi)$ where $\diamond$ is an epistemic possibility operator. Then the additional detail that Lewis omits, that the person does not know there is no penny in his pocket is relevant. Interpreted this way "if I had looked, I might have found a penny" is not plainly false, because "might" is understood as an epistemic possibility operator.
- Stalnaker's formalisation explains "why it is anomalous to deny the would conditional while affirming the corresponding might". Lewis's formalisation cannot explain this.