

Versatile anti-presuppositions in counterfactual conditionals

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The puzzle

O-marked and X-marked conditionals

- (1) a. If it **is** raining outside, then Sally **is** inside.
b. If **was** raining outside, then Sally **would be** inside.
- Semantically, (1a) and (1a) seem to convey different meanings: (1a) talks about the actual world while (1a) seems to talk about (plausible) possible worlds.
 - Morphosyntactically, (1a) uses the present indicative while (1b) uses the simple past and an extra modal auxiliary in the consequent (*woll*).
 - Following we call this *morphosyntactic* marking O-marking in the case of (1a) and X-marking in the case of (1a).
 - Other languages may use other strategies to X-mark, among which special tense, mood, aspect, or special independent markers.

The counterfactual inference

(1b) If **was** raining outside, then Sally **would be** inside.

- Roughly, (1b) implies that the closest possible worlds in which it is raining outside are such that Sally is inside.
- But it also conveys something more, namely that it is actually not raining outside. Some evidence that this is not part of the core meaning of (1b):

(2) a. It's not the case that if it was raining outside, Sally would be inside.

\rightsquigarrow Not raining.

 b. Perhaps if it was raining outside, then Sally would be inside.

\rightsquigarrow Not raining.

 c. Is it true that if it was raining outside, then Sally would be inside?

\rightsquigarrow Not raining.

 d. (1b) –Hey, wait a minute! I did not know it wasn't raining outside!

- We call this inference the counterfactual inference (CI), which arises in a majority of X-marked conditionals.

The nature of the CI

- The tests in (2) suggest that the CI is a presupposition. But why would X-marking (whose realization is variable across languages) be the trigger for such an inference? What is the role of the competing O-marked conditional? Also, why does the CI disappear in sentences like (3) – dubbed Anderson Conditionals?
- (3) If Jones had taken arsenic, he would have shown the same symptoms he is actually showing.
- In this talk, we want to better understand the source of the CI, by relating the use of X-marked conditionals to the QUD:
 - We show that the inference pattern of a conditional depends on *how* it answers a given QUD.
 - We relate this observation to a constraint stated by Heim about the use of presuppositions in answers to questions.
 - We show how this line of reasoning could apply to Anderson conditionals.

Conditionals and the QUD

- A conditional *If P then Q* can answer different kinds of questions:
 - Is “If P then Q” true?
 - Under what conditions is Q true?
 - Is P true?
 - Is Q true?
- In the talk, we focus on the last two. For instance, we assume that (1b) repeated below can answer the QUDs in (4) and (5).

(1b) If **was** raining outside, then Sally **would be** inside.

(4) Is it raining outside?

(5) Is Sally inside? (More generally: what about Sally?)

- (6) QUD: Is it raining outside?

If **was** raining outside, then Sally **would be** inside.

Conveyed answer: It is not raining outside, *because sally is not inside.*

- (7) QUD: What about Sally?

If **was** raining outside, then Sally **would be** inside.

Conveyed answer (weak): Sally would be inside if it was raining but it's not, draw your own conclusions.

Conveyed answer (strong): Sally is not inside.

- How is the answer conveyed?

The CI and the QUD

(6) A: Is it raining outside?

B: If **was** raining outside, then Sally **would be** inside.

C: Hey wait a minute! I did not know it wasn't raining outside! ✗

C: Hey wait a minute! I did not know Sally wasn't inside! ✓

(7) A: What about Sally?

B: If **was** raining outside, then Sally **would be** inside.

C: Hey wait a minute! I did not know it wasn't raining outside! ✓

C: Hey wait a minute! I did not know Sally wasn't inside! ✗

- This pattern makes sense, given the following constraint:

Heim's constraint on answering the QUD

Questions cannot be answered by an accommodated presupposition.

- But it also means that if the QUD targets the antecedent of an X-marked conditional, the answer should not be conveyed by the CI!

Overview of the analysis

- We want to argue that the CI is “versatile” in that it can target either the antecedent of the consequent of the X-marked conditional, depending on the QUD:
 - If the QUD targets the consequent, then the CI targets the antecedent (as previously assumed).
 - If the QUD targets the antecedent, then the CI is derived from the consequent (novelty).
- The proper answer to the QUD is derived *via* reasoning:
 - If the QUD was targeting the consequent, the answer is either conditionalized or presented as a strengthened *modus ponens* argument.
 - If the QUD was targeting the antecedent, the answer is provided as a *modus tollens* argument.

Some background

- The nature of the CI is debated:
 - Implicature [Iatridou, 2000, Ippolito, 2003] : supported by the fact that it can be cancelled and reinforced in specific contexts.
 - Presupposition [von Stechow, 1998, Karawani, 2014] : supported by the classic projection tests and the *Hey, wait a minute!* test.
 - Anti-presupposition [Leahy, 2011, Leahy, 2018]: may allow to account for the mixed behavior of the CI.
- We adopt a variant of Leahy's proposal here.
 -

If $P \models (Q)$ the set of closest worlds in which P holds are s.t. Q holds
 $Q(\text{the}(P)) \quad Q(p)(q)$

if p then $M \ q \ q?$ $p \Rightarrow q$ not p accomodate after antecedent \Rightarrow does
not hold in actual world and in all closest worlds where p holds q holds
 \Rightarrow could have just said $q?$ not $q?$

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Principles of presupposition in development.
Linguistics and Philosophy, 46(2):291–332.



Iatridou, S. (2000).
The grammatical ingredients of counterfactuality.
Linguistic Inquiry, 31(2):231–270.



Ippolito, M. (2003).
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Karawani, H. (2014).
The Real, the Fake, and the Fake Fake: in Counterfactual Conditionals, Crosslinguistically.
PhD thesis, Universiteit van Amsterdam.



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Presuppositions and antipresuppositions in conditionals.

Semantics and Linguistic Theory, 21:257.



Leahy, B. (2018).

Counterfactual antecedent falsity and the epistemic sensitivity of counterfactuals.

Philosophical Studies, 175(1):45–69.



von Fintel, K. (1998).

The presupposition of subjunctive conditionals.

Appendix: on Heim's constraint

- The following example is taken from [Aravind et al., 2022] to illustrate the point in the general case:

(8) *Context: A is visiting a dog shelter and is particularly interested in adopting a Labrador.*

A: Can I adopt the Labrador?

a. B: Someone from NY just adopted the Lab.

No presupposition.

b. # B: It is someone from NY who just adopted the Lab.

↗ Someone adopted the Labrador.

(9) *Context: A is visiting a dog shelter and is particularly interested in adopting several Labradors.*

A: Do you have more than one Lab for adoption?

a. B: There is 3 Labradors available for adoption.

No presupposition.

b. # B: There is a Labrador available for adoption.

↗ There is more than one.