

High Negation in Subjunctive Conditionals

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Introduction. Counterfactuality in subjunctive conditionals is a cancellable implicature (Anderson 1951): (1). However, counterfactuality has been argued to be uncancellable in the presence of so-called ‘high negation’, which doesn’t anti-license PPIs (Schwarz and Bhatt 2006, Ippolito and Su 2009), as the contrast between high and low negation in (2) shows.

(1) If Jones had taken arsenic, he would have shown the symptoms that he indeed showed.
So, it is likely that he took arsenic.

(2) If there #hadn’t_{High} been some_{PPI} / there had been **no**_{Low} oil in the tank, the furnace would have made exactly the noise that it in fact did. So, it’s likely that the tank was empty.

Following a suggestion in Schwarz (2006), Ippolito and Su (2009) propose that high negation associates with a factive operator presupposing that its complement (“there was some oil in the tank” in (2)) is true. Though this analysis accounts for the contrast in (2), it is not clear how to extend it to cover the contrast between high and low negation in polar questions: (3a) with high negation is an information-seeking question necessarily conveying the speaker’s epistemic bias of towards *p* (= ‘John drank alcohol tonight’), whereas (3S’) with low negation can be used in an epistemically neutral way (Romero and Han 2004).

(3) a. Didn’t_{High} John drink some_{PPI} alcohol tonight?

b. Did John drink **no**_{LowNeg} alcohol tonight?

The **goal** of this paper is to provide an unified analysis of high negation in both environments. We will do so by examining the behaviour of so-called Common Ground (CG) management operators, elaborating on previous analysis of (3) and making a new proposal for (2).

CG-managing operators. Certain items, like German discourse particles like *ja* in (4), have been argued to indicate the C(ommon) G(round) status of the uttered proposition. We will call this information “CG-management content” (Repp 2013), remaining agnostic as to whether it can be reduced to Conventional Implicature (CI) content (Kratzer 1999, Zimmermann 2001), to presuppositional content (Kaufmann 2010) or to neither. Key to our analysis will be the CG-managing operator **FALSUM** in (5). (5b) is from Repp (2013); (5a) is our innovation.

(4) a. At-issue content: $\lambda p_{\langle s, t \rangle}. p$ Discourse particle *ja*

b. CG-man. content: $\lambda p_{\langle s, t \rangle}. \text{speaker thinks that addressee might know that } p$

(5) a. At-issue content: $\lambda p_{\langle s, t \rangle}. \neg p$ **FALSUM**

b. CG-man. content: $\lambda p_{\langle s, t \rangle}. \lambda w_s. \forall w' \in \text{Epi}_x(w) [\forall w'' \in \text{Conv}_x(w') [p \notin \text{CG}_{w''}]]$

[Paraphrase: “*x* is sure that, in all the worlds satisfying *x*’s conversational goals, *p* is not added to the CG”. Abbreviated as **FOR-SURE-NOT-IN-CG(p)**]

Two important properties of CG-managing operators are these. First, CG-management content, just like at-issue content, is semantically embeddable under illocutionary operators, e.g. **ASSERT** and **Q**. Second, GC-management content, unlike at-issue content, is not semantically embedded otherwise. Hence, if a DiP appears syntactically in a non-root environment, it must “latch onto” some semantic material *p* (underlined) that is presupposed (6), appositive or has some other root-like status (Jacobs 1989, Hinterhölzl and Krifka 2013).

(6) Karl hat seinen Job verloren, [_{CP} weil er **ja** in der Gewerkschaft war].

‘Karl lost his job [_{CP} because he was **JA** in the union]’

High negation in polar questions. Following Repp (2013), we assume that high negation in polar questions is the overt realization of the CG-managing operator **FALSUM**. This gives us the LF (7) and the interpretation (8) for sentence (3a). The at-issue content (8a) provides the cells of the partition the addressee is requested to choose from; this straightforwardly derives the answers “Yes” (=p) and “No” (=¬p). The CG-management content (8b) derives the epistemic bias in a way similar to Romero and Han (2004): the speaker asks the addressee if he has fully convincing evidence against adding *p* to the CG, suggesting that the speaker is

biased towards p and would need strong evidence to be convinced otherwise.

- (7) LF of (3a): [Q [FALSUM [John drank some alcohol tonight]]]
 (8) a. At-issue content: { you did not drink alcohol, $\neg$ (you did not drink alcohol)}
 b. CG-man. content: { FOR-SURE-NOT-IN-CG(you drink alcohol),
 $\neg$ FOR-SURE-NOT-IN-CG(you drink alcohol) }

High negation in subjunctive conditionals. It has been noted that there is a connection between questions and conditional antecedents, in that clauses that have the internal syntax of an interrogative clause can semantically serve as antecedents of several types of conditionals sentences (Rawlins 2008, Onea and Steinbach 2011): (9). We argue that a connection in the opposite direction exists as well: an antecedent clause *[if α]* signals that there is an open issue as to whether or not α is the case in the relevant domain of worlds, that is, it signals that the domain D of worlds the conditional quantifies over in (10a,b) can be partitioned into $\{\alpha, \neg\alpha\}$. We implement this idea in (11) using Questions under Discussion (QUD) (Roberts 1996), though other implementations might do as well (e.g. in Inquisitive Semantics). Note that, crucially, (11) instructs us to build a polar question out of the *CG-management content* of α .

- (9) Whether Mary comes or not, the party will be fun.
 (10) a. If Mary went to the party yesterday, it was fun. $D \subseteq CG$
 b. If Mary had gone to the party yesterday, it would have been fun. $D \not\subseteq CG$
 (11) A conditional antecedent *[if α]* presupposes that $\llbracket Q \rrbracket(\llbracket \alpha \rrbracket^{CG-man-content})$ is a QUD.

We are now ready to derive the infelicity of high negation in (2a). We propose that high negation is the overt realization of FALSUM not only in polar questions but also in conditional antecedents. This gives us the LF (12) for example (2a) and the compositional step in (13). At the at-issue level, the conditional sentence will correctly quantify simply over worlds where there wasn't oil in the tank, i.e, the worlds in (13a). But, additionally, the QUD in (13b) is presupposed, asking the addressee if he has fully convincing evidence against adding p (p = 'there was oil in the tank') to the CG, which again suggests that the speaker is biased towards p and would have to be convinced otherwise. This speaker bias towards p (= 'there was oil in the tank') clashes with Anderson-style scenarios, where the speaker is trying to argue that $\neg p$ (= 'the tank was empty'). Hence the infelicity of high negation in Anderson-style examples.

- (12) $[_{CP} \text{ If } [_{IP} \text{ there had been some oil in the tank }]]$
 (13) $\llbracket \text{If FALSUM } [_{IP} \text{ there had been some oil in the tank }] \rrbracket$
 a. At-issue content: $\lambda w. \neg(\text{there was oil in tank})$
 b. Presupposed QUD: { $\lambda w. \text{FOR-SURE-NOT-IN-}CG_w(\text{there was oil in tank}),$
 $\lambda w. \neg\text{FOR-SURE-NOT-IN-}CG_w(\text{there was oil in tank})$

A further prediction. Modus Tollens examples like (14) also show that counterfactuality is not an entailment or presupposition. For, if it were, the conclusion in (14) would feel redundant. Note that, contrary to Ippolito and Su's factive analysis, we do not predict infelicity of high negation in this case: expressing an epistemic bias for p (= 'there was oil in tank') and making an argument to convince the addressee of p are two compatible things. The prediction of the present analysis is born out: high negation in (15) is perfectly acceptable.

- (14) If John had killed the victim, he would have used a knife. But the victim was killed with a stiletto. Thus, it wasn't John who killed the victim.
 (15) If there hadn't_{High} been some_{PP1} oil in the tank, the furnace would not have lit. But it did lit. Thus, there was some oil in the tank.

SELECTED REFERENCES. Ippolito and Su. 2009. Counterfactuals, negation and polarity, *NELS* 40. Repp, Sophie. 2013. Common Ground Management: Modal particles, Illocutionary Negation and VERUM. In Gutzmann & Gaertner, eds., *Beyond Expressives*. Leiden: Brill. Romero and Han. 2004. On Negative Yes/No Questions, *L&P* 27. Schwarz and Bhatt. 2006. Light Negation and Polarity. In R. Zanuttini et al., eds, *Negation, Tense, and Clausal Architecture*. Georgetown U. Press.