Referring to propositions 'inside' a negated one: The role of the subjunctive and of modal particles

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The present study investigates propositional anaphors that target the non-negated content of a negated proposition. It focuses especially on the role that the Dutch modal particle *ook* can play in constructions which also involve a predicate of personal taste, see (1B). In the Dutch dialogue in (1), speaker A asserts a negative proposition: $\neg\varphi$. B responds to this assertion and in doing so, refers to the non-negated content of A's assertion, φ, with the anaphor *dat*. Note that B's utterance contains the subjunctive modal *zouden* ('would'), the past participle *geweest* ('been') and the modal particle *ook* (lit. 'also'). Intuitively, all these seem to be necessary to target φ instead of $\neg\varphi$.

(1)   A: [Jan heeft gisteren   niet gewerkt.]$_{\neg\varphi}$ B: Dat$_\varphi$ zou ook raar   zijn geweest.
          Jan has   yesterday not worked   that SUBJ OOK weird be   been
          'Jan didn't work yesterday.'   'That would have surprised me (if he did).'

The marking by *geweest* in addition to the subjunctive *zouden* is expected on some accounts of counterfactual constructions like (1B), e.g. Karawani (2014), but not on others e.g. Von Fintel (1998). The presence of the modal particle is unexpected. The present study investigates experimentally if both the past participle and the modal particle are needed to refer to φ in Dutch sentences like (1B), and offers a theoretical account of the findings.

24 native speakers of Dutch took part in a forced-choice experiment. They read dialogues that consisted of a negative assertion and a response to it (24 test items, 24 fillers). Each dialogue was embedded in a scene-setting introduction. The test items contained a response similar to (1). There were four different types of responses, depending on the two two-level factors TENSE (presence/absence of *geweest* (± tense)) and OOK (presence/absence of *ook*, (± ook)). After reading the response, participants read a sentence that required completion (e.g. for (1) *B would consider it weird …*), and were offered two alternatives to complete the sentence: The alternatives were antecedents of conditionals, one representing the negative proposition $\neg\varphi$ (e.g. *if Jan didn't work yesterday*) and one the non-negative proposition φ (e.g. *if Jan worked yesterday*). Participants had to choose the proposition they considered the more natural completion. The figure below shows the mean percentages of the choice of the non-negated proposition φ. It shows that both the presence of the past participle *geweest* and the presence of the modal particle *ook* increased the preference for the positive proposition φ. The effects add up so that the condition with both *geweest* and *ook* is the one that is judged to be the best way of referring to a positive proposition φ inside a negative proposition $\neg\varphi$.

Mean proportions of choice of non-negative proposition with 95% Conf.Int.
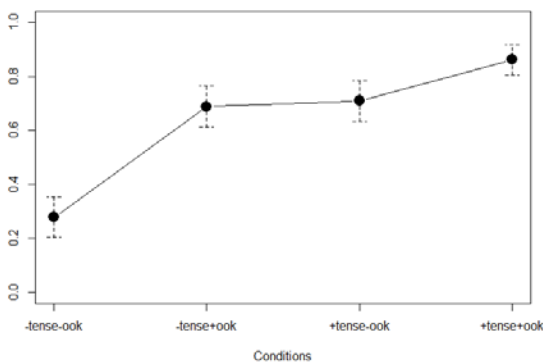
Turning to an explanation of these findings, and starting with the modal particle, we find that literature on *ook* is sparse. For the German counterpart of *ook*, *auch*, it is has been proposed that the particle indicates that the previous utterance was expected (Thurmair 1989, Karagjosova 2003). Karagjosova furthermore claims that *auch* is a causal particle – a claim which could not be confirmed experimentally by Bergmann and Repp (2015), who compared *auch* to other potentially causal modal particles. We propose that *auch* and *ook* can be captured in Von Fintel and Gillies's (2010) framework for the modal verb *must*. In this framework, a kernel K is suggested to be the set of propositions that a speaker has direct evidence for. Matthewson (2015) characterizes K as the set of propositions describing world knowledge as well as trustworthy reports. K determines a modal base, B_K, which is $\cap K$. Suppose a speaker has direct evidence for the proposition *people come in with wet raingear*. Now, B_K, directly settles the proposition *it is raining*, based on the world knowledge that *if people come in with wet raingear, it is raining* and its intersection with the proposition *people come in with wet raingear*. Crucially, K does not directly settle *it is raining*, as the propositions in K are not intersected: there is no entailment. For *must* the

authors assume that it comes with the presupposition that its prejacent is not directly settled by *K*. *It must be raining* would thus be a felicitous utterance when one sees people come in with wet raingear, but not when one is looking outside at the actual rain. For *auch* and *ook*, I assume that the particles presuppose that the proposition ψ_{-1}, preceding the proposition modified by *ook* ψ_0, had already been directly settled by B_K before it was asserted, see (2) defined for *ook*. Thus, ψ_{-1} was already inferable for the speaker of the *auch-/ook-*utterance, based on prior knowledge.

(2) Fix a contextually relevant kernel *K* and a modal base B_K ($\equiv \cap K$):
$[\![ook\ (\psi_{-1},\psi_0)]\!]^{c,w} = 1$ if $B_K \subseteq [\![\psi_{-1}]\!]^c$ before ψ_{-1} was asserted.

In constructions like (1B), *ook* thus marks that the previous, in this case negated, proposition was inferable.

The subjunctive modal *zouden* and the past participle *geweest* can be modelled in terms of Karawani's (2014) model of future counterfactual conditionals. However, since the Dutch marking is expected to be similar for the future, her model might be extended to the past. Karawani proposes that counterfactual conditionals that are "singly" marked (only subjunctive, no participle), e.g. (3), are defined if and only if the antecedent is not part of the set of worlds that the speaker considers likely to become actual (*E*). "Doubly" marked conditionals, e.g. (4), are true if and only if the antecedent is not part of the set of worlds compatible with one's knowledge (*K*, a superset of *E*).

(3) I don't know whether John will come to the party, but if he came, he would have a great time.
(4) John will not come to the party tonight. Too bad. If he had come, he would have had a great time.

From Karawani's (2014) account, the preferred presence of the subjunctive modal and the participle found in the experiment follows naturally: they are part of a doubly marked counterfactual, indicating incompatibility of the antecedent with the speaker's knowledge, the antecedent corresponding to the embedded positive proposition *Jan worked yesterday*. The additional presence of *ook* marks that the negation of the incompatible positive proposition – as expressed by the entire preceding utterance – was inferable, thus feeding into the intended interpretation.

The finding that a "singly" marked counterfactual (i.e. *–tense*) in the presence of *ook* still seems to be sufficient to target the non-negated proposition, might be problematic for Karawani. However, considering that there seems to be no inherent restriction on what modal elements count as markers for counterfactuality, one could hypothesize that *zouden* and *ook* doubly mark the counterfactual. However, this means that in such counterfactuals, the presence of *ook* contributes to a meaning that is rather different from its meaning in other constructions, as suggested above. Furthermore, the implicit assumption raises general concerns of compositionality. One could also say that there is only single marking by *zouden* and that *ook* does not take part in the marking. A more detailed enquiry is needed to explore in how far the two interpretations (incompatibility with *E* vs. *K*) relate to the preference frequencies observed in the experiment.

Another option to account for the findings would be to explain the subjunctive modal *zouden* in terms of Von Fintel (1998). He argues that the subjunctive comes with the presupposition that the worlds that are quantified over, are partly outside of the context set. That means that the worlds quantified over are not a proper subset of the worlds describing the speaker's knowledge. Therefore, it is implied that the proposition is false. So in constructions like (1B), *zouden* signals that the speaker is claiming that the proposition that *dat* refers to is not in the context set. *Ook* then signals that the assertion as a whole, $\neg\varphi$, was inferable. This forces the listener to reconstruct the referent of *dat* in (1B) as a proposition that is compatible with $\neg\varphi$. This seems to work out. However, it is unclear if the use of the past participle can be easily accommodated in this account. For the dialogue in (1), one could claim that the past particle in (1B) is required because a past event is under discussion. However, for discussions about future events, as mentioned above, the same marking appears to be felicitous, but this has not been investigated experimentally yet.

Bergmann & Repp 2015 Causality and the influence of different modal particles on the mental representation of discourses. Poster. *AMLaP.* **von Fintel 1998** The presupposition of subjunctive conditionals. *The interpretive tract*, 25:29–44. **von Fintel & Gillies 2010** Must... stay... strong! *NaLS* 18(4): 351–383 **Karagjosova 2003** Modal particles and the common ground. *Perspectives on dialogue in the new millennium*, 114. **Karawani 2014***The Real, The Fake and The Fake Fake: in Counterfactual Conditionals, Crosslinguistically*. Utrecht: LOT. **Matthewson 2015.** Epistemic indefinites. *Evidential Restrictions on Epistemic Modals*. Oxford: OUP, 141–160 **Thurmair 1989** *Modalpartikeln und ihre Kombinationen*. de Gruyter.