Biscuits and provisos:
Conveying unconditional information by conditional means.

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In some cases, the utterance of a conditional sentence $A \rightarrow C$ is felt to convey the truth of its consequent. The *biscuit conditional* in (1a) is a canonical example. At the same time, satisfaction theories of presuppositions (and some others) face what Geurts (1996) calls the *proviso problem*: For a sentence like $A \rightarrow C$, where C presupposes X, these theories predict that the whole sentence carries the presupposition $A \rightarrow X$. However, when such a sentence is used in a context where this is not (yet) commonly presupposed, hearers frequently accommodate something stronger, namely X. (1b) is a typical example.

(1) a. If you are hungry, there is pizza in the fridge.
   $\rightsquigarrow$ There is pizza in the fridge.
   b. If John joins us on the vacation, he will bring his wetsuit.
   $\rightsquigarrow$ John has a wetsuit.

In both cases, the utterance of a sentence that otherwise has a conditional implication is felt to convey that the consequent of the implication is taken to be true by the speaker. Utilizing the notion of *conditional independence*, van Rooij (2007) proposed an account of the proviso problem and Franke (2009) of biscuit conditionals and other conditionals that give rise to an unconditional interpretation. What makes both accounts attractive is their extreme parsimony: The unconditional implication arises simply in virtue of a plausible contextual assumption (viz., that the antecedent and the consequent of the implication are conditionally independent in a relevant information state). Moreover, the attractiveness of either account can be seen as support for the other. On the face of it, we have a uniform, simple explanation for two puzzling phenomena.

Problematically, though, it is far from obvious that one can adopt both analyses jointly. Here is why: Both accounts trace their respective phenomenon to the same contextual presumption of conditional independence. But then, adopting both analyses at the same time, it seems we are forced into the prediction that conditional presuppositions are strengthened in a given context c if and only if the assertion of the presupposed conditional would get an unconditional interpretation in c. But this prediction is patently false. In most contexts, (2a) does not get an unconditional ('biscuit') interpretation, while (2b) intuitively gives rise to an unconditional presupposition in most contexts.

(2) a. If Bill is flying to Toronto, he has a sister.
   b. If Bill is flying to Toronto, his sister will meet him at the airport.

I argue that this problem can be overcome. Besides reassuring those who find the accounts attractive individually, understanding how they are compatible yields additional insights into how the two accounts, and the underlying phenomena, function.

Conditional independence. van Rooij and Franke make the following observation: If an information state σ is such that (a) A and X are *conditionally independent* in the sense defined in (3) and (b) σ supports $A \rightarrow X$, and (c) σ is compatible with A, then (d) σ also supports X.

(3) p and q are *conditionally independent* in σ, written $CI_\sigma(p,q)$, iff $\forall X \in \{p, \neg p\}$: $\forall Y \in \{q, \neg q\}$: If $\sigma \models \Diamond X$ and $\sigma \models \Diamond Y$ then $\sigma \models \Diamond(X \wedge Y)$, where $\sigma \models \Diamond\phi$ iff $\sigma \cap \phi \neq \emptyset$.

Franke's account of biscuit conditionals is sufficiently explicit to not require elaboration. I spell out van Rooij's proposal by making formally explicit the meta-reasoning about possible information states implicit in his account. Presupposition accommodation is viewed as removing uncertainty about what the speaker might be presupposing (Beaver 1999). Let every world w in the hearer's information state I determine an information state σ_w (construed as the speaker's belief state, or the speaker's view of what the common ground is or should be). Then the outcome of accommodation of a semantic presupposition p can be defined as $Acc(I,p) = \{w \in I \mid \sigma_w \models p\}$. Now suppose that the hearer believes that the speaker takes A and X to be conditionally independent, i.e. that $\forall w \in I : CI_{\sigma_w}(A,X)$ and further that $\forall w \in I : \sigma_w \models \Diamond A$. Then it immediately follows that $Acc(I, A \rightarrow X) \models X$. Crucially, the result that the speaker's information state supports X is a mere *side-effect* of accommodating the conditional presupposition under certain conditions, it is not the outcome of a separate strengthening process.

Proviso and probability. Some of van Rooij's arguments deflecting criticisms of Geurts (1996) rely on the assumption that for a speaker to felicitously assert $A \rightarrow C$, his presuppositional state has to satisfy $\Diamond A$, $\Diamond \neg A$, $\Diamond C$ and $\Diamond \neg C$. However, except for the first, these assumptions are at odds with at least some biscuit and factual uses of conditionals. Fortunately, with the construal of van Rooij's account adopted above, it becomes very similar to the Bayesian account in Lassiter (2012), which arguably is the most articulated and successful defense of a satisfaction semantics in face of the proviso problem to date. As it turns out, Lassiter's argumentation can be adapted and extended to (my construal of) van Rooij's account where necessary. As a result, this account can match Lassiter's predictions in all but one case, making only the uncontroversial assumption that a speaker who utters $A \rightarrow C$ must take A to be possible. The two accounts differ only with respect to the following generalization proposed by Lassiter: $A \rightarrow C_X$ will be perceived to imply X if A and X are probabilistically independent, and also if the speaker-subjective conditional likelihood of X, given A, is presumed to be smaller than the unconditional likelihood of X, but not if the opposite is the case. Lassiter offers (4a) as motivation, but, problematically, his generalization predicts an asymmetry with (4b), which does not seem to be present (cf. Geurts (1996, p. 282–284)).

(4) a. If the grass has not been mowed in months, Bill's gardener will do it soon.
$\rightsquigarrow$ Bill has a gardener.
b. If the grass has been mowed regularly, Bill's gardener won't have to do it soon.
$\rightsquigarrow$ Bill has a gardener.

Until we have more data to evaluate Lassiter's generalization, I conclude that an account in terms of conditional independence does at least as well as Lassiter's, without making use of probabilistic notions.

Proviso vs. biscuits. We can use a presumption of conditional independence to account for both the proviso problem and for biscuit conditionals, if we take into account an independent pragmatic requirement on conditionals. Arguably, $A \rightarrow C$ is in pragmatic competition with C, and there is a *ceteris paribus* preference for uttering the (shorter, less complex) C instead of the conditional. As Lauer (2013) argues, such situations give rise to stringent requirements that are more robust than other Gricean inferences. In particular, if a speaker opts for the dispreferred form, the addressee must infer a reason why the speaker did so, otherwise infelicity results. The inferred reason can be epistemic (if A and C are conditionally dependent for the speaker) or non-epistemic (e.g. relate to considerations of relevance, as in classical biscuit examples). We feel compelled, even in contexts in which we otherwise would presume independence, to interpret (2a) as indicating that the speaker takes the consequent to be dependent on the antecedent because in most contexts it is hard to find a non-epistemic justification for conditionalizing **Bill has a sister** on **Bill is flying to Toronto**. In (2b), by contrast, conditionalization is motivated effortlessly because the at-issue content of the consequent is epistemically dependent on the antecedent. Thus, the contrast in (2) arises because a presumption of conditional independence is a necessary, but not sufficient, condition of a biscuit interpretation, while it is both necessary and sufficient for 'strengthening' the presupposition of conditionals.

References

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