Particles, Modality and Coherence

Introduction. The phenomenon of modal subordination is well-studied, if perhaps not well-understood. However, the fact that such subordination does not in all cases require modals has received little attention. This talk considers the case of sentence-final particles, which are shown to license modal subordination in both English and Japanese. The facts are given a dynamic semantic analysis that brings out the connection between particles and modality, in terms of maximization of coherence.

Data. Modal subordination is a discourse phenomenon in which an anaphoric expression is dependent for its meaning on an antecedent which is in the scope of a modal, a position normally inaccessible for anaphora. In (1), for example, while the second sequence is infelicitous, as the presence of a modal blocks anaphoric dependence on a *wolf*, the third sequence, where a modal is added in the second sentence, is fine.

(1) a. A wolf came in. It was big and hairy.
   b. A wolf might come in. # It is big and hairy.
   c. A wolf might come in. It would be big and hairy.

This phenomenon is much discussed, and has inspired a great deal of research (e.g. Geurts 1995, Frank 1997, Asher and McCready 2007). One fact that has come to light is that most speakers resist discourses like (2a); somehow *will* is too ‘realis’ to allow dependencies to the clearly epistemic *might*. Surprisingly, though, this is fixable; we need only add the sentence-final particle *man* to the second sentence to make it felicitous.

(2) a. A wolf might walk in. # It will eat you first.
   b. A wolf might walk in. It will eat you first, man.

This phenomenon has a correspondent in Japanese (Asher and McCready 2006). While (3a) is bad, adding the sentence-final particle *yo* to the second sentence makes it perfectly fine.

(3) a. ookami-ga kuru kamosirenai. # ∅ anata-o taberu
   wolf-NOM come might ∅ pro you-ACC eat
   ‘A wolf, might come in. It (will) eat you.’
   b. ookami-ga kuru kamosirenai. ∅ anata-o taberu yo.
   wolf-NOM come might ∅ pro you-ACC eat YO
   ‘A wolf, might come in. It, (will) eat you, man.’

Analysis. McCready (2006) analyzes *yo* as inducing revision of information states (Gärdenfors 1988). The ‘strong-assertion’ predicate *sassertφ* simply instructs the interpreter to update with *φ* if such an update is possible, and if it is not, to revise her information state in such a way that it becomes possible. (The talk generalizes this analysis to imperatives and questions.) *Man* (and *yo*) embody that predicate (though *yo* has an additional presupposition).
\( \sigma[s\text{assert}\varphi]\sigma' = \)
\( \sigma[\varphi]\sigma' \) if \( \sigma[\varphi] \neq \emptyset \)
\( \sigma[\neg\varphi; \varphi]\sigma' \) else.

\( [\text{man}_s] = \lambda p.\text{assert}(p) \)

McCready (2006) provided an initial analysis of the modal subordination facts making use of discourse-level underspecification. The idea was that, given the right discourse conditions, the meaning of \( yo \) and \( man \) surface as modal in nature. The particular conditions were just those found in modal subordination contexts: weak causation between a pair of events, the first scoped under a modal. This analysis in itself doesn’t have much to say about why these particular contexts should enable a modal meaning. I think that a more explanatory analysis comes from a more general consideration of the analysis above.

On that analysis, \( man \) and \( yo \) strengthen speech acts, in the sense that they modify the hearer’s information state to avoid inconsistency. One can think of this as a kind of repair strategy applied to maximize the coherence of a communicative move. This notion of coherence involves consistency of post-update information states: it is not coherent to say things that you know are believed false by your interlocutor. Another kind of incoherence comes from making conversational moves that are uninterpretable in some context—e.g. to assert sentences that are known to contain pronouns that lack antecedents (or that fail to refer to anything), or that have presuppositions that are not satisfied. The infelicitous cases of modal subordination above are of this type.

I therefore suggest that \( man \) and \( yo \) are applying here as a repair strategy as well, one that serves to make the otherwise inaccessible antecedent accessible; in this context, that simply means being interpreted as modal. We might say, then, that the sentence-final particles apply to maximize coherence. Doing so unifies the two uses of the particles, and further provides an explanation of why the particles are interpreted as modal in just these contexts.

Formally speaking, for the modal cases, we need a mechanism that can look more closely at the content of particular discourse segments. A natural framework for this project is Segmented Discourse Representation Theory (SDRT; Asher and Lascarides 2003); it already contains a notion of maximizing (dis-)course coherence which seems ideal for the purpose in that it involves checking whether variables are bound. All we need do is compare numbers of unbound variables (including presuppositions) left on a modal vs nonmodal meaning for the particle: this is straightforward enough. One worry that may arise with this analysis is that it might seem to do too much: one might expect cases of presupposition failure, or infelicitous examples of quantificational subordination (QS), to be licensed by particles, which is empirically wrong. This worry is misplaced. On this analysis, the particles are interpreted only as revision operators or as modals; neither can save presuppositions or induce QS. The end of the talk offers some discussion on the relation between maximization of coherence and modality: in brief, it is claimed that the relation is direct and natural. Support comes from a consideration of several (primarily dynamic) semantic theories of modality (Kratzer 1981, Veltman 1996, Asher and McCready 2007).