FC Disjunction in State-based Semantics

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In a state-based semantics sentences are interpreted with respect to states (defined as sets of possible worlds) rather than single possible worlds. This feature makes state-based semantics particularly suitable to capture the inherent epistemic and/or alternative-inducing nature of disjunctive words in natural language. In the first part, I will discuss three notions of disjunction that have been proposed in state-based semantics with emphasis on their potential to account for Free Choice (FC) inferences when combined with a possibility modal:

(1) FC inferences
   a. Wide scope: $\Diamond a \vee \Diamond b \models \Diamond a \wedge \Diamond b$
   b. Narrow scope: $\Diamond(a \vee b) \models \Diamond a \wedge \Diamond b$

The first notion $\vee_1$ corresponds to disjunction in classical logic; the second notion $\vee_2$ has been independently proposed in team logic (Yang and Väänänen, 2016) and in assertability logic (Hawke and Steinert-Threlkeld, 2015); the third notion $\vee_3$ corresponds to inquisitive disjunction as in Ciardelli and Roelofsen (2011) (see also some versions of truthmaker semantics). Team/assertability logic $\vee_2$ in combination with a context-sensitive notion of modality à la Veltman (1996) derives wide scope FC inference (as discussed in Hawke and Steinert-Threlkeld, 2015). Inquisitive/truthmaker $\vee_3$ combined with Aloni's (2007) alternative-sensitive notion of modality derives narrow scope FC inference. Neither combinations however can account for both wide scope and narrow scope FC. Furthermore, when free choice inducing sentences occur embedded under negation, both systems predict weaker readings than attested in ordinary language use. In the second part of the talk, I will present a third state-based system, adopting $\vee_2$, which derives both wide scope and narrow scope FC while solving the negation problem. Merits and shortcomings of this novel system will be discussed as well as its potential to be extended to account for free choice indefinites.

References

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