

MODALITY, WEIGHTS, AND INCONSISTENT PREMISE SETS

This paper investigates certain data that appear to motivate complicating the semantics for weak necessity modals. I argue that the standard Kratzer semantics can capture the relevant data while minimizing the semantic differences between weak ('should', 'ought') and strong ('must', 'have to') necessity modals. The resulting analysis clarifies what sorts of propositions figure in premise sets, and illuminates previously puzzling semantic and pragmatic properties of weak/strong necessity modals.

Weights and priorities. Suppose your only goals are to go for a run (now) and to watch a movie (now). You can't do both, but you want to go for a run much more than you want to watch a movie. Call this case 'WEIGHTED GOALS'. Intuitively, (1) is true, and (2) is false.

- (1) In view of your goals, you should go for a run.
- (2) In view of your goals, you should watch a movie.

WEIGHTED GOALS might seem to call for an ordering source like the following: $g(w) = \{ \textit{You run}; \textit{You watch a movie} \}$. But since you can't simultaneously go for a run and watch a movie, *run*-worlds are $\lesssim_{g(w)}$ incomparable to *movie*-worlds. Given a standard semantics for 'should' on which it universally quantifies over the set of $\lesssim_{g(w)}$ best accessible worlds, this incorrectly predicts that (1) and (2) are false. The different strengths of your goals don't seem to be represented in the standard semantics.

Some have taken this problem to be insurmountable for the standard semantics (e.g., [2: 61–64]). To capture priorities among premises perhaps one might revise the standard semantics by introducing (among other things) a weighting relation that ranks propositions in the ordering source. But such complications are, I argue, unnecessary. The problem is that we don't have a nuanced enough characterization of the contents of your goals in WEIGHTED GOALS. Goals (norms, etc.) don't usually come in form of categorical imperatives. Instead they often come with "conditions of applicability," conditions under which they're to be pursued. In WEIGHTED GOALS the ordering source should instead be something like $g^*(w) = \{ \textit{You run} \leftrightarrow \textit{you don't want to do anything else more}; \textit{You watch a movie} \leftrightarrow \textit{you don't want to do anything else more} \}$. This correctly generates that (1) is true and (2) is false. Rather than introducing a semantic mechanism that weights categorical premises, we can encode features of the priorities in question into the premises themselves, i.e., via applicability conditions.

Weak and strong necessity. Intuitively, 'Should ϕ ' expresses that ϕ is necessary. Yet it's well established that though 'should' is logically stronger than possibility modals like 'may', it's weaker than modals like 'must'. What isn't well established is how to capture this difference in strength. I argue that applicability conditions play a crucial role in explaining the weak/strong necessity distinction.

First, I raise concerns for certain existing accounts of this distinction. On the account in [1], whereas 'must' quantifies over the $\lesssim_{g(w)}$ best worlds, 'ought' quantifies over the $\lesssim_{g(w)}$ best worlds that are also best in view of some additional measure, represented by a secondary ordering source. A worry with this account is that little is said about how primary and secondary ordering sources are determined independently of the truth conditions of the relevant 'should' and 'must' sentences, i.e., in a manner that doesn't simply involve reverse engineering them from relevant truth value judgments.

Rubinstein [3] attempts to capture the intuitions driving the analysis in [1] without introducing secondary ordering sources. On Rubinstein's view strong necessity modals quantify only over the best worlds as determined by the conversationally agreed upon values of modal base $f_{cg}(w)$ and ordering source $g_{cg}(w)$, whereas weak necessity modals conventionally signal that for the preajcent to be necessary the modal must be interpreted w.r.t. certain non-common-ground assumptions, i.e., a monotonic

update of $f_{cg}(w)$ or $g_{cg}(w)$. This signal, SigW, is argued to be a type of conventional meaning that is projective, not-at-issue, and antibackgrounded. Rubinstein’s account nicely highlights previously underappreciated sensitivities to common ground assumptions in weak/strong necessity modals. However, I argue that it isn’t clear whether SigW passes the tests she considers, or whether there’s independent attestation of the proposed kind of meaning component. This gives us reason to reconsider the idea that the relevant difference between ‘should’ and ‘must’ is truth conditional.

I defend this idea and argue that we can still retain Rubinstein’s core insights concerning the common ground and the weak/strong necessity distinction. Consider (3) (cf. [3: 141]).

- (3) [Context: I want to go to Harlem. There are several ways for me to get there.]
- a. Me: Traveling quickly would be nice.
You: Sounds good. You should (?must) take the A train.
 - b. Me: Traveling quickly is most important, more important than safety or anything else.
You: Sounds good. You must (?should) take the A train.

Though Rubinstein suggests that the non-common-ground assumption that the necessity claim in (3a) depends on concerns the goal of traveling quickly described in the ordering source, it’s unclear why this goal shouldn’t be in $g_{cg}(w)$ after my utterance. Rather the extra assumption seems to concern whether there are competing goals and, if there are, how to rank their relative importance. My utterance in (3a), as in (3b), establishes in the common ground my *conditional* goal of traveling quickly, i.e., that I travel quickly iff I have no stronger competing goals. What is not settled in (3a), but *is* settled in (3b), is whether this goal’s applicability conditions obtain, i.e., what the *modal base* is like.

I suggest that herein lies the important difference between ‘should’ and ‘must’ and their relation to the common ground: Roughly, ‘must’ presupposes that the applicability conditions of certain relevant norms, goals, etc. hold, whereas ‘should’ makes a subjunctive claim about what *would* be necessary in the relevant sense *were* those applicability conditions to hold. More formally, where D selects the maximal elements of a preordered set, and where $\mathcal{C}_{g(w)}$ is the set such that, for each premise in $g(w)$, it either contains that premise’s applicability condition or its negation:

- (4) a. $\llbracket \text{Must } \phi \rrbracket^{c,w} = 1$ iff $\forall w' \in D \left(\bigcap f_{cg}(w), \lesssim_{g_{cg}(w)} \right) : \llbracket \phi \rrbracket^{c,w'} = 1$
b. *Presupposition*: $\bigcap f_{cg}(w) \subseteq \bigcap \mathcal{C}_{g_{cg}(w)}$
- (5) a. $\llbracket \text{Should } \phi \rrbracket^{c,w} = 1$ iff $\forall w' \in D \left(\bigcap (f_{cg}(w) \cup \mathcal{C}_{g_{cg}(w)}), \lesssim_{g_{cg}(w)} \right) : \llbracket \phi \rrbracket^{c,w'} = 1$
b. *Presupposition*: $\bigcap (f_{cg}(w) \cup \mathcal{C}_{g_{cg}(w)}) \neq \emptyset$

This analysis has various desirable features. First, it captures how ‘Must ϕ ’ asymmetrically entails ‘Should ϕ ’. Second, it makes correct predictions concerning the relative felicity of ‘should’ and ‘must’ in a variety of contexts. E.g., since your ‘must’ claim is felicitous and true in (3b), using the weaker ‘should’ would violate a Gricean quantity maxim; hence ‘must’ is preferred. In (3a) the presupposition of ‘should’ but not ‘must’ is satisfied; even after my assertion is accepted, it still isn’t common ground that the applicability condition for my goal of traveling quickly holds; hence ‘should’ is preferred. Third, the analysis suggests a natural explanation for the cross-linguistic phenomenon of expressing weak necessity through CF-marking on a strong necessity modal ([1]). Fourth, it provides a uniform explanation for the behavior of weak and strong necessity modals that generalizes across modal flavors. E.g., it can capture the surprising data point that, for deontic as well as epistemic readings, ‘Must ϕ but $\neg\phi$ ’ is inconsistent in a way that ‘Should ϕ but $\neg\phi$ ’ isn’t.

[1] von Stechow & Iatridou (2005), What to do if you want to go to Harlem, MS. [2] Lassiter (2011), *Measurement and modality*, Ph.D. thesis. [3] Rubinstein (2011), Projective signals of weak necessity modals, Projective Content Workshop.