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The language of higher-order uncertainty

Epistemic modals have long been thought to display severe restrictions in their embedding potential. In addition, when they do embed it is often claimed that the outer modal is vacuous – so that "It must be possible that it's raining" just means "It's possible that it's raining". Recently Moss (2015) has observed that, in certain carefully elaborated contexts, constructions with multiple epistemics like "It must be probable that ..." are intuitively acceptable and seem to express higher-order uncertainty. I'll present some recent work examining the range and interpretation of such constructions, and use the result to motivate a new semantics for nested modals. This semantics relies on two theoretical moves that are novel in formal semantics, but have strong psychological and philosophical motivation: representing uncertainty in terms of causal models, and distinguishing carefully between between epistemic and stochastic uncertainty. The result is a strictly compositional interpretation of epistemic modals embedded under other epistemic modals which predicts their apparent higher-order uncertainty readings.