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Causal dependence in ability and actuality

Ability predicates exhibit a curious interpretive duality across languages, in some contexts describing the general abilities of an agent, and in others what the agent actually did. In languages that mark grammatical aspect, the alternation extends to abilitative uses of the possibility modal, and is governed by aspectual marking (Bhatt, 1999). For instance, the imperfectively marked French modal *pouvoir* ('can') in (1) is compatible with a 'pure' ability interpretation, but perfective *pouvoir* in (2) gives rise to an **actuality entailment (AE)**, requiring (only) that its complement was realized.

1. Marja **pouvait** traverser le lac à la nage, mais elle ne l'a jamais traversé. (Marja **could-imperfective** swim across the lake, but she never crossed it.)
2. Marja **a pu** traverser le lac à la nage, #mais elle ne l'a pas traversé. (Marja **could-perfective** swim across the lake, #but she did not cross it.)

AEs resist compositional explanation in a literature which treats ability as a circumstantial possibility operator, and the perfective as imposing temporal boundaries on eventualities in its scope (Hacquard, 2006, a.o.). I propose an account which derives both ability and actuality interpretations from a novel **causal dependence** component in the semantics of ability. The main idea is that ability modals describe a complex causal structure, in which the (circumstantial) possibility that an agent S will realize an event A(S) obtains in view of the causal dependence of A(S) on an action or strategy available to S. This proposal is partially motivated by a philosophical literature which indicates that ability claims are stronger than pure circumstantial possibilities (Kenny, 1976; Brown, 1988).

I develop the argument by comparing actuality inferences to the interpretation of two other complement-taking predicate classes: **implicative verbs** (e.g., *manage*; Karttunen, 1971) and ***enough* and *too* comparatives** (e.g., *be fast enough*; Meier, 2003). I show that, in both cases, inferences about complement actualization follow from causal dependence relations embedded in the lexical semantics and composition of the verbal predicate, and demonstrate that the aspectual class properties of this causal structure interact with viewpoint aspect to produce contrasts paralleling (1)-(2). Ultimately, AEs from ability modals result not just from the composition of modality and aspect, but more specifically from the composition of aspect with the specific type of complex causal possibility conveyed by ability predicates.

I formalize causal dependence relations over the structure of graphical causal models (Pearl, 2000; Schulz, 2011; Kaufmann, 2013). In such models, the felicity conditions imposed by causal necessity/sufficiency presuppositions depend crucially on the discourse background. Grammatical aspect then selects for a particular interpretation of the abilitative causal structure by selecting for a particular type of background. The success of a causal dependence analysis in explaining implicative and actuality inferences lends support to a broader program of semantic investigation, which argues that the types of contrasting dependencies that can be defined over formal models of causation play an important role in the semantic representations and linguistic reasoning associated with both overtly and non-transparently causal language.