Causal dependence in ability and actuality

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The philosophical literature on ability typically differentiates ability modals from other possibility operators, on the grounds that abilitative can is stronger than circumstantial possibility (Austin 1961, Kenny 1975, Belnap & Perloff 1988). On the latter reading, (1) holds if at least one circumstantially-accessible world is such that Rebecca hits the target. Intuitively, however, ability requires a higher level of consistency. Recent work (Maier 2017, Mandelkern et al 2017) captures this by treating ability modals as hypothetical guarantees: (1) asserts that Rebecca has an available action $A(R)$ such that all $A(R)$-worlds are target-hitting worlds.

(1) Rebecca can$_{ability}$ hit the target.

These accounts leave open the nature of the connection between $A(R)$ and the prejacent. I analyze this in terms of causal dependence (Schulz 2011), presupposing the hypothetical action $A(R)$ to be causally sufficient for Rebecca’s hitting the target (3). This analysis builds on recent treatments of complement-entailing implicative verbs like manage, on which they assert the occurrence of an event taken to be causally responsible for bringing about the implicative complement (Baglini & Francez 2016, Nadathur 2016). To motivate this analysis, I show that it offers a solution to the longstanding puzzle of actuality entailments from perfectly-marked ability modals in aspect-marking languages like French (2; Bhatt 1999). Actuality entailments are simply instances of implicative behaviour: the complement-entailing semantics of manage is derived in the composition of perfective aspect with a complex, causal ability modal.

(2) Rebecca a pu tirer sur la cible, #mais elle ne l’a pas tirée.

Rebecca could-PFV shoot the target, #but she did not shoot it.

(3) Proposal. $X_{NP} \text{can}_{ability} Y_{CP}$

presupposes: $\exists A(X) : A(X) \vdash_{cause} Y(X)$

asserts: $\Diamond_{circ} A(X)$

Proposal (3) aligns ability modals with exercisable-capacity attributions like (4), which presuppose that a potential manifestation of speed is causally sufficient for winning the race (Nadathur 2017). Ability modals are simply non-specific about the causing action. Like ability modals, enough-constructions like (4) entail their complements under perfective aspect (Hacquard 2005). These entailments are predicted by causal structure: a stative attribution like (3) combines with the event-selecting perfective aspect only via aspectual coercion (de Swart 1998). Nadathur (2017) argues that, in (4), ‘actualistic’ coercion (Homer 2011) produces a manifestation of the exercisable capacity. The complement entailment follows from the presupposed causal sufficiency of this manifestation.

(4) Juno a été rapide pour gagner la course. PFV → ‘Juno moved fast enough . . .’

Juno was-PFV fast enough to win the race. ($\vdash$ Juno won the race.)

Similarly, actualistic coercion forces a reading on which the agent of an ability modal takes the hypothetical causing action; the prejacent follows, again via causal sufficiency. Correctly, no actuality entailments are predicted under imperfective aspect, because no aspectual coercion need occur (and thus the causing action can remain hypothetical).

This account capitalizes on existing accounts of the special nature of ability modals, while drawing on points of convergence with implicative verbs to argue for an additional causal component. An independently-motivated aspectual contrast on stative predicates is recruited to explain the aspect-dependence of actuality entailments: while implicatives directly assert the realization of a causing event, ability modals underlyingly assert only its possibility. Complement entailments arise when aspectual coercion introduced by the perfective ‘strips’ the potentiality from the ability predicate. The complex causal structure is crucial: actuality entailments are (correctly) not predicted in the absence of the structure in (3) (cf. Mari 2016).