

Causation in Semantics and Grammatical Structure

Week 15: Causal models and implicatives

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- ▶ this shows two things:
 - ▶ causation/causal reasoning is ubiquitous in language (it shows up even when we're not overtly aware of describing causal situations and affects our judgements)
 - ▶ since contrasting causal relations (necessity and sufficiency) are important for explaining the lexical semantic phenomenon we're looking at today, this is another argument for not treating causation in language as monolithic (i.e., we need more than just CAUSE)

The phenomenon: implicative verbs

Implicative verbs (Karttunen 1971) systematically generate inferences about the truth of their complements:

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This shows that implicative complement inferences are **entailments**.

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 \vdash Solomon managed to build the temple.
- ▶ intuitively, stating the *manage*-sentence and stating its complement are not equivalent

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- i. *manage to* $X \vdash X$
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- ▶ so the set of circumstances where *X* is appropriate is a superset of the cases where *manage to X* is appropriate
- ▶ ...consequently, we infer more from *manage to X*, and this is why the two statements aren't discursively equivalent

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- c. γ Archer couldn't help but think about all the trouble they managed to get into, without even trying.

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ii. Examples where **difficulty** is denied:

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Upshot: none of **trying, difficulty, unlikelihood** can be lexically presupposed (encoded) by *manage*

- ... or some of these examples should be infelicitous

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Intuitively: *managing* to do *X* is about getting around some kind of obstacle or taking care of some causal precondition for doing *X* (see also Karttunen 2014)

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Baglini & Francez's proposal:

- (9) A sentence of the semantic form *manage to X*:
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- ▶ it isn't settled whether or not this thing will happen (the asserted content settles this)

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 - ▶ so, (10) is not evaluable because its presuppositions fail

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- ▶ **situation:** a partial valuation of the relevant propositional variables – represents that certain facts might be known or settled, while other are not

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So, if *manage to* X presupposes a catalyst for X , then there is something that is not yet guaranteed and which must occur in order for X to be realized

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- ▶ *asserts*: the background situation **actually caused** Solomon to build a temple

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- ▶ assuming no causal laws were broken, this means that the 'something which needed to happen' must have happened
- ▶ so, a *manage* assertion effectively tells us that Solomon got around the potential problem

How the proposal works

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- ▶ so, we can conclude that the intermediate condition also failed

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 - ▶ it might be the case that the rain is coming so soon that it's basically impossible for him to get far enough in the work – as a consequence of the presupposition, this makes Solomon **unlikely** to build the temple
 - ▶ it's possible to get the work done, but it requires Solomon himself to come down and work hard on the construction, and he is not very well – in this context, it's **difficult** for Solomon to build the temple

Supporting evidence

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 - ▶ here, the intermediate step between the catalyst and the door opening is the pressing of the button

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- ▶ in that case, the *because*-clause (which modifies asserted content) should produce the same meaning in (16a) and (16b)
- ▶ for B&F, the assertion in (16a) is about the causal chain between the background and the buying of the ring, so *because* explains something about the causal chain, not the purchase itself

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 - ▶ ...so, it's hard to specify its nature

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Another benefit of refining the account: we can explain the relationship between implicatives like *manage* and predicates like *be able*

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- a. Solomon was able to build the temple.
 \rightsquigarrow *Solomon built the temple.*
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- ▶ we have only *actually caused* or *did not actually cause*, both of which force a value for the complement
- ▶ but, for positive assertions of one-way implicatives, we cannot draw any non-cancellable entailments about the complement

(22) Solomon was able to build the temple, but he decided against it.

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 - ▶ periphrastic causatives like *make* are, effectively, one-way *sufficiency* implicatives