Implicit Causality and Explicit Consequentiality

Oliver Bott (Universität Bielefeld)
Torgrim Solstad (Universität Bielefeld)

In the study of sentence processing, Implicit Causality (IC) and Consequentiality (ICons) biases have enjoyed significant attention as expectation-based phenomena (a.o. Garvey & Caramazza 1974, Brown & Fish 1983, Koornneef & van Berkum 2006, Pykkönen & Järvikivi 2010, Bott & Solstad 2014, Garnham et al. 2020). Language production research has found a 'mirror bias' for a number of the involved verb classes, e.g. stimulus-experiencer (*annoy*) and experiencer-stimulus (*admire*) verbs. Thus, causality prompts (*because*) display a stimulus bias, whereas consequentiality prompts (*so (that)*) display an experiencer bias (Crinean & Garnham 2006, Hartshorne et al. 2015). Consequently, Crinean & Garnham (2006), Pickering & Majid (2006), and Hartshorne et al. (2015) argued for a Causal Symmetry Hypothesis: What triggers the IC bias, should also be responsible for ICons, causes and consequences being part of one relation. Although Crinean & Garnham (2006) as well as Hartshorne et al. (2015) are 'verb-based accounts' and Pickering & Majid (2006) is based on world knowledge, they share the prediction that causes and consequences should be equally available.

In our talk, we will argue for the Causal Asymmetry Hypothesis instead, and propose that different mechanisms apply to IC and ICons. For IC, verb semantics triggers causal specifications, involving a contingency relation with an underspecified cause (i.e., *what is it about John that annoys Mary?*; Hartshorne & Snedeker 2013, Bott & Solstad, 2014, Bott & Solstad, to appear). We assume no parallel mechanism for consequences, as the effect is already specified in the verb (i.e., *annoying* causes *being annoyed*).

Evidence for the Causal Asymmetry Hypothesis will be presented from three written production studies. This set of experiments directly contrasts IC and ICons, showing that the two discourse biases are in fact very different from each other once we look beyond coreference into discourse structure.

References:

Bott/Solstad (2014): From verbs to discourse: A Novel Account of Implicit Causality. In Hemforth et al. (eds.): *Psycholinguistic approaches to meaning and understanding across languages.*

Bott/Solstad (to appear): Discourse Expectations – Explaining the Implicit Causality Biases of Verbs. To appear in *Linguistics.*

Brown/Fish (1983): The psychological causality implicit in language. *Cognition.*

Crinean/Garnham (2006): Implicit causality, implicit consequentiality and semantic roles. *Language and Cognitive Processes.*

Garnham/Child/Hutton (2020): Anticipating causes and consequences. *Journal of Memory and Language.*

Garvey/Caramazza (1974): Implicit causality in verbs. *Linguistic inquiry.*

Hartshorne/O'Donnell/Tenenbaum (2015): The causes and consequences explicit in verbs. *Language, Cognition and Neuroscience.*

Hartshorne/Snedeker (2013): Verb argument structure predicts implicit causality. *Language and Cognitive Processes.*

Koornneef/Van Berkum (2006): On the use of verb-based implicit causality in sentence comprehension. *Journal of Memory and Language.*

Pickering/Majid (2006): What are implicit causality and consequentiality? *Language and Cognitive Processes.*

Pykkönen/Järvikivi (2010): Activation and persistence of implicit causality information in spoken language comprehension. *Experimental Psychology.*