

Conditional Reasoning and Working Memory

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This study is aiming at exploring the effect of working memory load (WML) on probabilistic conditional reasoning while taking into account the number of disablers and alternatives of a conditional. We expect that acceptance rates of MP and MT inferences *increase* in the WML condition for conditionals with many disablers. Disablers have been shown to *decrease* acceptance rates of MP and MT inferences (both logically valid), but when WML is increased, the retrieval of those disablers from memory should be hindered (DeNeys, Schaeken, & d'Ydewalle, 2005). The same goes for alternatives and the (logically invalid) AC and DA inferences: a conditional with many alternatives has usually *lower* acceptance rates of AC and DA inferences. Again, with increasing WML the retrieval of alternatives is hindered, thus leading to a *higher* acceptance rate. WML is manipulated within subject with a simple dot-memory task. Also within subject, we vary the number of disablers and alternatives (few vs. many). Two online pre-studies have shown that the expected effect of WML could not be found consistently, but is largely influenced by the content of the sentences. Thus, in a next step, we are going to test more conditional sentences as to enlarge our sentence sample. For the final analysis, we plan to compute the effect of WML within the framework of the dual source model (Klauer, Beller, & Hütter, 2010), expecting WML effects on the knowledge but not on the form parameter.

Literature:

- De Neys, W., Schaeken, W., & d'Ydewalle, G. (2005). Working memory and everyday conditional reasoning: Retrieval and inhibition of stored counterexamples. *Thinking & Reasoning*, 11(4), 349–381. <http://doi.org/10.1080/13546780442000222>
- Klauer, K. C., Beller, S., & Hütter, M. (2010). Conditional reasoning in context: a dual-source model of probabilistic inference. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36(2), 298.