

Review of: "Cognitive Dissonance Model of Conditional Reasoning based on Truth-making"

Jan Sprenger¹

¹ University of Turin

Potential competing interests: No potential competing interests to declare.

The article presents research on a theme that is dear to my personal interests: how people reason with conditionals (and how people perform conditional reasoning). A strong point of this article consists in the fact that it points out that reasoners may aim at making a conditional *true*, as opposed to not just making it false. The authors use this idea, and in particular the inspiration from truthmaker semantics (Kit Fine), in order to explain certain patterns we see in reasoning, especially the advantage that Modus Ponens enjoys over other reasoning schemes.

I have, however, a couple of questions that I hope the authors could address in a revision of this paper, or in a future publication on this topic:

1. THE LITERATURE ON CONDITIONALS. It is somewhat surprising that the authors introduce the analysis of "If A, then B" via the truth conditions of the material conditional "not A or B" as the standard view in the philosophical literature. Same for the mental model theory of conditionals regarding the more empirically oriented literature in psychology. I think both accounts are now superseded as the standard account by a suppositional theory of conditionals, according to which (i) indicative conditionals have at best partial truth conditions, and (ii) valid reasoning with conditionals amounts to some sort of high probability preservation ("p-validity"). The most famous and arguably most fruitful articulation of this account can be found in Adams's 1975 book "The Logic of Conditionals", but see also for example his 1986 paper "On the Logic of High Probability". More recently, David Over and his collaborators have developed this theory further and I would suggest that the authors engage with it more strongly.

Specifically, it is not clear that the normative framework for conditional reasoning consists in classical logic endowed with the material conditional; in fact, Adams and similar-minded researchers (David Over, Dorothy Edgington) have provided numerous and compelling arguments to the contrary. I also recommend Edgington's Stanford Encyclopedia of Philosophy

article as a survey on the philosophical literature and the questions that are at stake there.

2. SUPPOSITIONAL REASONING. On a minor note, when the authors write “suppositive [reasoning, inference, ...]”, I guess they mean “suppositional”. But I am not sure I have identified what exactly are the forms of suppositional inference that the authors intend to contrast to deductive reasoning. A clearer description would be appreciated. It was also quite hard to decipher what is measured in Figure 4, how scores are calculated, how choices in the Wason problem translate to scores, etc.

3. TRUTHMAKING. I take it that the authors want to explain the participants’ endorsement of MP, compared to other forms of inference, by the desire to truth-make the conclusion. On this account, while a conditional “if A, then B” is (strictly) true if and only if A and B are both true, it is only not-false if A is false. This not-falsity can be spelled out either by means of partial truth valuations à la Adams, or as a proper third truth value in the de Finetti/Cooper/Belnap tradition. (Recently, Égré, Rossi and Sprenger have elaborated this account in a series on papers published in “Journal of Philosophical Logic” and some drafts available online; they also provide references.) In any case, this would explain why MP corresponds to the preservation of (strict) truth while Modus Tollens (from not-B and “If A, then B” infer not-A) has the problem that there is simply no model such that both premises are (strictly) true. On the other hand of the spectrum, this account would explain why people like to commit the fallacy of Affirming the Consequent (from B and “If A, then B” infer A): A simply holds in the only model where both premises are strictly true. I do not know how useful these remarks are to the authors, since they also reflect my personal inclinations, but since their discourse relies heavily on the idea of truth-making, I would suggest that they consider the truth-value gap and the trivalent approach more seriously. I also think it is more elaborate and more promising than Fine-style truthmaker semantics in the context of conditionals.