NOTE ON DEDUCTIVE INFERENCES

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Matheus Silva

In relation to inferences, there is a tendency to conflate alethic with epistemic modalities:

**Material inference (material implication)**

1. It’s not the case that *B* is false and *A* is true in a given world. (alethic claim)
2. It’s certain that *B* isn’t false and *A* is true in a given world. (epistemic claim)

**Formal inference (formal implication)**

(1\*) It’s not the case that *B* is false and *A* is true in any possible world. (alethic claim)

 (2\*) It’s certain that *B* isn’t false when *A* is true in any possible world. (epistemic claim)

But notice that (2) doesn’t follow from (1), and (2\*) doesn’t follow from (1\*). Now, suppose one asserts (1) because it is highly likely. In this case, there would be no meaningful distinction between (1) and the non-deductive inference:

 (1#) It is unlikely that *A* is true and *B* is false in a given world.

This suggests that the main reason to distinguish deductive from non-deductive inferences lies in epistemic modalities, but what determines whether an inference is deductive or not are its alethic commitments. In other words, the supposed non-deductive status of an inference is simply an epistemic element that should be irrelevant from a logical point of view—unless the goal is to express reasoning about knowledge and belief.

The same could be said about patterns of coherence requirements for inferences such as *modus ponens* and hypothetical syllogism. They track the consequences of alethic truths and not our epistemic commitments.