

Relating Semantics with Incompatibility

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NOTE. This paper presents what is very much work in progress.

Aker and Brandom have developed a semantics for classical **S5** that bears a resemblance to relating semantics. It employs a primitive relation of incompatibility between proposition, exemplified by ‘ a is red all over’ and ‘ a is green all over’. But this is their sole primitive: there are no assignments of truth values. According to Brandom, the meaning of a sentence is determined by the set of sentences with which it is incompatible. This is the germ of a theory of meaning that is an alternative to the more common truth or verification conditional theories of meaning. I argue that in their semantics for **S5** incompatibility is governed by an axiom that stands in conflict to this meaning theoretical idea. Aker’s and Brandom’s Axiom of Persistence states that if a set of sentences is incoherent, then all its supersets are incoherent. Although this is correct for a notion of inconsistency, it is not correct for the meaning-determining notion of incompatibility. Aker’s and Brandom’s notion of incompatibility is therefore ambiguous. The aim of this talk is to investigate whether insights from relating semantics for logics can help salvage some of their ideas. Epstein’s relating relation may be interpreted as a relation between the content of propositions, e.g. that they are about the same subject matter or topic. Similarly, incompatibility is a notion that relates propositions due to their contents, not their formal features. As we’ll see, incompatibility does not lend itself naturally as the relating relation of relating semantics: in particular, reading the relating relation in the truth conditions for the conditional as incompatibility does not result in a sensible conditional. Negation, on the other hand, has a natural definition in terms of incompatibility: $\neg A$ is true iff there is a true B that is incompatible with A . Incompatibility is different from the relating relation in that it imposes a restriction on truth value assignments: if p and q are incompatible, at most one of them is true. I propose to try it the other way round and define a notion of incompatibility in terms of Epstein’s (reflexive and symmetric) relating relation and see what results. My hope is that this will provide insights into the formal properties of the notion of incompatibility and suitable clauses for the connectives when incompatibility is used as the primitive. Indeed, the relating relation appears to be definable in terms of incompatibility, and so once we have found suitable clauses for the connectives, we turn things around again. My aim is thereby to provide an improved kind of incompatibility semantics for (not necessarily classical) logic that combines some of Aker’s and Brandom’s work with material from relating semantics and new ideas.