Relevance and Conformity

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The Ackermann-Anderson-Belnap systems E of entailment and R of relevant implication possess three properties in virtue of which they are said to be "relevance" (or "relevant") logics.

First, whenever an entailment $A \to B$ is provable in E or R, the formulas A and B share at least one propositional variable. The relevantists maintain that in a true entailment or implication there must be some connection in meaning or content between antecedent and consequent, and they view the variable-sharing condition as a formal counterpart of this idea.

Second, E and R are *paraconsistent* in the sense that in these systems the deductive effects of inconsistency are minimized and, accordingly, there are theories based on these systems that are negation-inconsistent and yet not trivial.

Third, the theorems of R (or better, the nontheorems of R) reflect what relevantists believe to be a corrected conception of proof from hypotheses, according to which in a correct proof there can be no extraneous or unused hypotheses. It is for this reason that such principles as

(1) $A \to. B \to A$

are rejected. For how, the argument goes, does A follow *from B*, given only the assumption that A is true?

These three properties are not independent. For example, given the proof-theoretical motivation (the third property), paraconsistency (the second property) is inevitable in that the pure implicational fragment of R, which embodies the proof-theoretical motivation, cannot be conservatively extended by the addition of a theory of truth-functional inference that contains

(2) $\sim A \,\&\, (A \vee B) \to B.$ (Disjunctive Syllogism, DS)

In such an extension it is possible to prove (1) and the like. But given the usual

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