

On the Logic of Contingent Relevant Implication: A Conceptual Incoherence in the Intuitive Interpretation of **R**

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The primary philosophical importance of relevance logics lies in their claim to provide intuitively plausible explications of preanalytic concepts of entailment. The crucial advantage of such systems lies in the inferential role they assign to ' \rightarrow '. Traditional formal systems have validated such sentences as ' $P \rightarrow (Q \rightarrow P)$ ' which, according to the relevance logician, commits both a fallacy of relevance and a fallacy of necessity. That is to say that entailment, in the sense in which that concept is operative in mathematical practice, presupposes both the relevance of antecedent to consequent and the necessity of all valid entailments. Both of these criteria are violated in the case of the above alleged entailment.

By taking both of these features into account in plausible and systematic ways, Anderson and Belnap [2] developed the system **E** of entailment which allows us to interpret coherently the symbol ' \rightarrow ' as expressing entailment. That is, so interpreted, the logical truths of the system are plausibly close to our preanalytic notions of what entailments are true.

Along the way to the development of **E**, Anderson and Belnap present the system **R** of relevant implications. The arrow of **R** is supposed to express an implication relation which, while maintaining relevance, does not imply necessity. But the status of the system **R** was clearly less secure than that of **E** in the minds of its inventors. The interpretation is less forthrightly presented and the system is less strongly endorsed than **E**.

Recently this attitude has undergone something of a reversal within the general community of relevance logicians. Now there is a great deal of interest in **R**, both formally and in application, while many have abandoned **E** in favor of

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