Katalin Bimbó* (bimbo@ualberta.ca), University of Alberta, Department of Philosophy, Assiniboia Hall 2–40, Edmonton, Alberta T6G2E7, Canada, and J. Michael Dunn (dunn@indiana.edu), Luddy School of Informatics, Computing and, Engineering, and Department of Philosophy, Indiana University, 901 East Tenth Street, Bloomington, IN 47408. Entailment and (restricted) mingle.

The logic of entailment ($\text{E}_\rightarrow$) was formulated as a sequent calculus by Kripke (Journal of Symbolic Logic 24 (1959):324). $\text{RM}$, the (full) logic of relevant implication $\text{R}$ with ($\text{M}$), the mingle axiom $A \rightarrow (A \rightarrow A)$ has been thoroughly investigated in the literature. $\text{E}_\rightarrow$ can be (non-equivalently) extended with ($\text{M}$) or ($\text{M}^*$), the restricted mingle axiom $(A \rightarrow B) \rightarrow ((A \rightarrow B) \rightarrow (A \rightarrow B))$. Anderson and Belnap (Entailment. The Logic of Relevance and Necessity, 1975, p. 94) posed the question (attributing it to S. McCall) whether $\text{E}_\rightarrow = \text{R}_\rightarrow \cap \text{E}^{M}_\rightarrow$. We use sequent calculus formulations of these logics to prove that the set of theorems of $\text{E}_\rightarrow$ is indeed the intersection of the set of theorems of relevant implication and that of $\text{E}^{M}_\rightarrow$. We also consider a version of the problem with ($\text{M}$), and we use a counter example to prove that $\text{E}_\rightarrow \neq \text{R}_\rightarrow \cap \text{E}^{M}_\rightarrow$. (Received September 04, 2020)