

- ▶ ALEJANDRO PINILLA-BARRERA, *Semilattice semantics for a relevance logic with constructive negation*.

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In 1958, [1] initiated a new research program, building primarily on the work of [2], which gave rise to relevance logic. The central idea is that, in a valid argument, there must be a meaningful connection between the antecedent and the consequent, thereby eliminating the paradoxes associated with classical implication such as the principle that any proposition follows from a falsehood, or the *Ex Falso Quodlibet* (the inference from A and $\neg A$ to B).

As the program evolved, several issues attracted the attention of relevance logicians, in particular, the provision of adequate semantics. This problem has been especially challenging because, as [3] observes, any semantic proposal for relevance logics must address the difficulties posed by negation, whose behavior in these systems often conflicts with core relevance principles.

Therefore, we extend the relevance logic system proposed in [4] by introducing a constructive negation in which falsity is conceived analogously to intuitionistic truth [5]. We then provide a semantic interpretation for this logic based on the semilattice semantics proposed by [3], proving soundness and completeness. Additionally, we highlight several properties of the resulting system.

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[3] ALASDAIR URQUHART, *Semantics for relevant logics*, *The Journal of Symbolic Logic*, vol. 37 (1972), no. 1, pp. 159–169.

[4] DAG PRAWITZ, *Natural Deduction: A Proof-Theoretical Study*, Dover Publications, 1965.

[5] DAVID NELSON, *Constructible falsity*. *The Journal of Symbolic Logic*, vol. 14 (1949), no. 1, pp. 16–26.