Real Reduced Models for
Relevant Logics without WI

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Abstract Slaney has provided reduced models (ones in which there is but one "real" world) for a number of relevant logics via certain kinds of frames, as opposed to the conventional Routley–Meyer model structures. This paper does three things: it corrects Slaney's paper, extends his results in a different direction, and draws a moral from the errors it corrects.

The corrections to Slaney's paper are very minor, the errors having been more in the nature of "slips" than of outright mistakes. The semantic structures of Slaney's paper are criticized for not being "semantical enough". It is then shown that Slaney's basic results can be used to provide reduced models for most of the same logics (the system **E** being a notable exception) using the Routley–Meyer model structures which do not suffer from this defect. The basic slip in the original paper was not to close the worlds of the canonical models of some of the systems under *all* of the primitive rules of inference of that system. The paper ends with a brief discussion of the philosophical significance of insisting that theories (worlds) be closed under certain rules of inference as well as under provable implication. That discussion insists upon the importance of a distinction between primitive/derivable rules of inference and merely admissible rules along the lines of Anderson and Belnap.

1 Introduction   Slaney [8] discusses the motivationally important matter of reduced modeling for relevant logics, duly notes that many important weaker relevant logics have not been provided with reduced modeling, and goes on to offer such for them in terms of frames, as opposed to the conventional model structures of Routley and Meyer [5],[6] for instance. In addition to their motivational importance, reduced models are technically and practically important for the practicing logician. They are simpler and hence easier to use. However we find [8] lacking in some very important respects.

In the first place, there are some minor (i.e., easily fixed) technical inaccuracies in the paper. Some of the claims made therein are false as stated, and some