

Cantorian Counterexamples and the Limits of Thought

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Kaplan's paradox for possible worlds semantics for intensional logic is generally introduced as a simple consequence of Cantor's theorem. Kaplan outlines a simple sentence that has no possible worlds models in which we let propositional variables range over the power set of the set of worlds in the model. For Kaplan's sentence could only be true at a world in such a model if there were a map from the set of worlds onto its powerset, which is ruled out by Cantor's theorem. However, not only is the negation of Kaplan's sentence valid in every possible world model of the relevant sort, it is in fact a theorem of a simple deductive system for intensional logic. Moreover, cardinality considerations appear to play no role whatever in the derivability of the sentence in question. In this talk, we look at the connection between the two results and move on to suggest that Cantorian counterexamples to the claim that a given function provides a map from a set onto its power set can be used as a heuristic for more informative results in the neighborhood of Kaplan's observation.