

Is logic empirical?

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Abstract

The philosophical debate about quantum logic between the late 1960s and the early 1980s was generated mainly by Putnam's claims that quantum mechanics empirically motivates introducing a new form of logic, that such an empirically founded quantum logic is the 'true' logic, and that adopting quantum logic would resolve all the paradoxes of quantum mechanics. Most of that debate focussed on the latter claim, reaching the conclusion that it was mistaken. This chapter will attempt to clarify the possible misunderstandings surrounding the more radical claims about the revision of logic, assessing them in particular both in the context of more general quantum-like theories (in the framework of von Neumann algebras), and against the background of the current state of play in the philosophy and interpretation of quantum mechanics. Characteristically, the conclusions that might be drawn depend crucially on which of the currently proposed solutions to the measurement problem is adopted.

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