

Qeauty and the Books: A Response to Lewis's Quantum Sleeping Beauty Problem

Peterson, Daniel (2009) Qeauty and the Books: A Response to Lewis's Quantum Sleeping Beauty Problem.

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Abstract

In his 2007 paper "Quantum Sleeping Beauty", Peter Lewis poses a problem for appeals to subjective probability in the Everett interpretation of quantum mechanics. Lewis' s argument hinges on parallels between the traditional "sleeping beauty" problem in epistemology and his quantum variant. These two cases, Lewis argues, treat probability differently despite the fact that they share important epistemic similarities, thus leading to a tension between the traditional solution to the sleeping beauty problem (typically called the "thirder" solution) and Everettian quantum mechanics. My purpose in this paper is to examine the metaphysical and epistemological differences between these two cases and, on this basis, determine if Lewis' s argument for a troubling tension between the Everettian and the thirder is as powerful as Lewis suggests. In particular, I examine the way in which diachronic Dutch book arguments suggest that the thirder solution in the traditional case is correct while the Everettian' s solution in the quantum case is correct. These Dutch book arguments, I argue, reveal an important disanalogy between the two cases, and thus Lewis' s argument does not reveal an inconsistency in either the Everettian' s or the thirder' s treatment of probability.

Keywords: Quantum Sleeping Beauty
Sleeping Beauty
Peter Lewis
Dutch Books
Everett
Many Worlds Interpretation of Quantum Mechanics

Subjects: [General Issues: Decision Theory](#)
[Specific Sciences: Physics: Quantum Mechanics](#)

ID Code: 4677

Deposited By: [Peterson, Daniel](#)

Deposited On: 03 June 2009