

# Quantum Probability and Decision Theory, Revisited

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## Abstract

An extended analysis is given of the program, originally suggested by Deutsch, of solving the probability problem in the Everett interpretation by means of decision theory. Deutsch's own proof is discussed, and alternatives are presented which are based upon different decision theories and upon Gleason's Theorem. It is argued that decision theory gives Everettians most or all of what they need from 'probability'. Contact is made with Lewis's Principal Principle linking subjective credence with objective chance: an Everettian Principal Principle is formulated, and shown to be at least as defensible as the usual Principle. Some consequences of (Everettian) quantum mechanics for decision theory itself are also discussed.

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