

Abstract Submitted
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The Correct Structure for Quantum Measurement (Inc. Null Measurement): Complementarity of W. James, Psychologist, Not Bohr
DOUGLAS SNYDER, None — Limitations in Einstein's and Bohr's approaches to quantum measurement are discussed. Einstein's solely independent physical reality (sivr) does not work because in that case quantum mechanics (qm) is incomplete as EPR showed. Nothing that is part of a svpr has been shown to complete qm. In fact, the opposite occurred. Bohr's complementarity that relies on an unavoidable physical interaction (upi) between a measuring apparatus (ma) and the particle measured (pm) involving an uncontrollable aspect limiting the precision in knowing one of two canonically conjugate quantities does not work since it too relies on physical interactions. That is the reason Bohr can only write of an "influence" in response to EPR without specifying the nature of this influence. James' view from psychology can work because it does not rely on an upi between a ma and the pm: "In certain persons, at least, the total possible consciousness may be split into parts which coexist but mutually ignore each other, and share the objects of knowledge between them. . . . They are complementary. Give an object to one of the consciousnesses, and by that fact you remove it from the other or others."

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None

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