

Proof by Pejorative

Let us examine the types of statements that do not belong in a scientific investigation of the measurement problem. Consider the following statements made by S. Goldstein in [301]:

“Many physicists pay lip service to the Copenhagen interpretation, and in particular to the notion that quantum mechanics is about observation or results of measurement. But hardly anybody truly believes this anymore—and it is hard for me to believe anyone really ever did.”

Reproduced from S. Goldstein, Quantum Theory without Observers—Part One, Physics Today 51, 3, 42 (1998) with the permission of the American Institute of Physics. <http://doi.org/10.1063/1.882184>

Consider the statement, “hardly anybody truly believes this anymore.” This is neither a mathematical statement nor a scientific statement. In order to show this in a scientific manner, one would expect at a minimum a poll of physicists that are queried in a scientific manner, which does not appear in the paper. This would beg the question: why would Bohr, Born (who won the Nobel prize for the statistical interpretation), von Neumann, London, Bauer, Wigner, Heisenberg, Penrose, Renninger, Stapp, and many others ever have believed this? From [301] Goldstein states:

“However, the Bohr-Einstein debate has already been resolved, and in favor of Einstein: What Einstein desired and Bohr deemed impossible—an observer-free formulation of quantum mechanics, in which the process of measurement can be analyzed in terms of more fundamental concepts—does, in fact, exist. Moreover, there are many such formulations, the most promising of which belong to three basic categories or approaches: decoherent histories, spontaneous localization, and pilot-wave theories.”

If Einstein won the debate with Bohr, then apparently somebody forgot to tell him. Interestingly Einstein was alive when Bohm’s pilot-wave theory was proposed, and in a letter in 1952 Born claimed [302]

Have you noticed that Bohm believes (as de Broglie did, 25 years ago) that he is able to interpret the quantum theory in deterministic terms? That way seems too cheap to me.

The pejoratives “Hardly Anybody,” “Difficult to take Seriously,” “Obviously,” “Clearly,” “Of Course,” etc., are inappropriate when one should be well aware there are scientists that have been working hard to resolve this problem with a contrary viewpoint. No matter how it is worded, dogma is not a scientific methodology.