Local Realism Versus the Quantum Spooks

Andrew P. Yake

Local realism is causation by ordinary causal signals. What we mean by ordinary is this. First, these signals have fully determinate properties, whether measured or not. Second, they can only cause effects precisely at the spacetime locality of their physical existence. By contrast, as Einstein famously observed, quantum causal signals are spooky because they can cause effects where they do not in fact exist. Indeed, the only evidence that quantum causal signals possess any physical existence at all is that they seem to explain every effect you could ever measure. Unless you think about it. Take the simplest case: One photon, one spin measurement, up or down. The quantum explanation is essentially that we draw the answer from a bag that contains no answers such that physical reality obtains precisely from its own absence. This is known as the "measurement problem". But the problem is obviously not "measurement". The problem is that quantum theory has literally no explanation for any specific measurement result. On the other hand, local realism does. Spin Up and Spin Down for photons must, at the end of the day, be analogous to Heads Up and Heads Down for ordinary fair coins. The quantum counterclaim, here, is that there is no compelling solution set of local hidden variables that makes this analogy work for an EPR experiment. Furthermore, many claim that the Bell inequality rules out any such solution set. On the other hand, anyone who thinks that the Bell inequality has some single uncontested meaning has not been reading the literature. The paper noted below claims both to provide local hidden variables that constitute a compelling local realistic solution for an EPR experiment and to explain how such solutions have been falsely denied.

See viXra:1704.0078 - Local Realism Explains Bell Violations - for a demonstration that all empirical evidence taken to support quantum theory over local realism plausibly does the reverse. The article comprises 8 pages, 4 figures, 6 equations, 32 references, a graph of testable predictions, and two paragraphs that purport to expose how the Bell inequality misrepresents the local realistic predictions for the EPR experiment.

Thoughtful feedback appreciated **(apyake@gmail.com)**.