

In quantum mechanics, are there predictions which are true but never can be empirically confirmed because of the extremely small probability of the particular event/phenomenon or these predictions are merely mathematical artefacts of the theory?



Michael Brenner

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There are three or four topics in this question alone which would deserve a post on their own, but let's briefly touch on each of them: first, let's remember what is the basis of science:

"Causality is the basis of all scientific work. Causality is the condition that renders science possible." (I.Kant)

Anything that comes along based on probabilities is punditry, not science: someone who predicts a 60% chance for a candidate to win an election, yet the opponent wins, has not failed, because the 40% of the other winning where also 100% real. It is no wonder then that a theory based on probabilities ends up being the best theory in history - every outcome, no matter how low the odds, is 100% real within the theory and thus such a theory cannot fail - which excludes it from being science, because it does not further "knowledge", which is what science means. You can treat the entire universe as a black box and only aim at finding a mathematical representation of the relation between input and output, without ever gaining knowledge of what actually happens in the black box. This is how string theory started, and it is no wonder that this theory has not produced a single fibre of what could be called knowledge, it is purest mathematical speculation without any appreciable connection to physical reality.

That could be the end of it, but Quantum mechanics is not even a physical proposition to begin with, it is an excuse for not being able to put two "things" i.e. particles in the same space at the same time (Max Born) - but that is what a superposition means, and that can only work physically for wave mechanics, but never for particle mechanics.

Also, a prediction which never is empirical verified remains speculation, as science is based on observation. 20th century scientists feel very much offended by such a demand wherefore they aim at abandoning empirical data altogether: "science in the absence of empirical data" has become a priority topic among "scientists"

.... after Quantum mechanics has abandoned physical reality already:

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our observations, or our consciousness of particles." (W.Heisenberg)

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The ability to pull the big picture into cohesion and cut through nonsense is rare, and rarer to couple that with clear communication. Love reading what you write on all topics

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Too bad the things Michael says are provably untrue, though.

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