

# Review of: "A single hidden variable interpretation of the quantum wave function"

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**Potential competing interests:** No potential competing interests to declare.

This paper presents a novel interpretation of quantum mechanics that uses a single hidden variable to explain the measurement problem, nonlocality, and the delayed choice quantum eraser experiment. The author argues that the standard wave function describes the total uncertainty of a quantum system, which is a combination of objective and subjective uncertainty. Objective uncertainty is due to the hidden variable, while subjective uncertainty is due to the observer's lack of knowledge about the hidden variable.

The author proposes that from the perspective of an outside observer, not entangled with the observed system, all interactions within the system are treated as unitary. This means that the wave function will at times describe an objective uncertainty, at other times a subjective uncertainty, and at yet other times a combination of both. For an observer inside the system, however, only the objective part of the uncertainty remains, and this can be described by an inner wave function. The hidden variable is invisible to the outside observer.

The author's interpretation is able to provide a number of advantages over other interpretations of quantum mechanics. First, it offers a nonretrocausal explanation of the delayed choice quantum eraser experiment. Second, it provides a solution to the new Wigner's friend paradox. Third, it is consistent with all known experimental results, including Bell's inequalities.

Overall, this paper is a well-written and thought-provoking contribution to the field of quantum mechanics interpretation. The author's ideas are novel and original, and they are supported by a clear and concise argument. The paper is also well-referenced, and the author demonstrates a good understanding of the relevant literature.

## Minor comments:

- The author could discuss the relationship between his interpretation and other interpretations of quantum mechanics, such as the Copenhagen interpretation and the many-worlds interpretation.
- The author could also discuss the implications of his interpretation for other areas of physics, such as quantum gravity.