

Review of: "Quantum Theory of Soul"

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The manuscript by Zhigang Sha and Rulin Xiu aims to bridge quantum physics with the concept of the soul, a topic that traditionally resides in the domain of theology and philosophy. The authors present a bold and innovative approach to an age-old question. However, the main strength of their approach lies more in its theoretical and conceptual aspirations than in empirical rigor or a clear and robust methodological framework.

Let me first attend to the **strengths of the manuscript**:

As I have already hinted, the manuscript ambitiously attempts to integrate quantum physics with spiritual and metaphysical concepts. This interdisciplinary approach is commendable as it ventures into relatively unexplored territories, potentially opening new avenues of inquiry. The authors strive to provide scientific definitions for traditionally abstract concepts like the soul, spiritual heart, and mind. This effort to quantify and describe these concepts within the framework of quantum physics is an innovative approach that could facilitate further scientific discussion in these areas. For that, the authors should be commended. Also noteworthy is the fact that the manuscript draws upon established quantum physics theories (such as the quantum vibrational field theory) and attempts to apply them to explain spiritual phenomena. This theoretical integration is a significant endeavor to unify seemingly disparate fields of study.

There are, however, some areas where the preprint can be improved:

The biggest challenge for the manuscript is the lack of empirical evidence supporting the core hypotheses. Quantum physics, while a robust scientific field, has not conventionally been applied to study the soul. The manuscript could benefit from a more rigorous methodological approach to testing its hypotheses.

Let me offer an example: One of the core hypotheses presented in the manuscript is the idea that the soul can be defined as the content of information in one's quantum vibrational field. This hypothesis is intriguing and attempts to provide a scientific framework for understanding the soul. However, it primarily remains a theoretical construct without substantial empirical backing. The authors mention, "With this definition, one can scientifically study and make predictions about the quality, character, and behavior of the soul and spiritual phenomena."

Now, one may or may not agree with this definition as an intriguing theoretical construct, but the hypothesis lacks a clear mechanism for quantitatively measuring the 'content of information' in the quantum vibrational field that would constitute the soul. In quantum physics, empirical evidence typically involves precise measurements and predictions that can be tested and replicated. The manuscript does not provide a methodology for such empirical testing. While the authors list

several predictions about the soul (such as the soul being eternal, the ability to connect with other souls remotely, etc.), these predictions are not accompanied by a clear experimental setup or method that would allow for their testing within the framework of quantum physics.

A more rigorous approach would begin with operational definitions that translate the concept of the soul into measurable entities or phenomena in quantum physics. For instance, if the soul is information in a quantum field, what specific quantum properties or states correspond to this information? How can these be measured or observed? (Operational definitions and measurements)

Also, the manuscript could benefit from designing specific experiments that test its predictions. For example, if the soul is proposed to affect physical reality, one could design an experiment to observe changes in a quantum system that could be attributed to this influence. (Designing experiments) Of course, such experiments would require interdisciplinary collaboration. Collaborating with experts in fields like neuroscience, psychology, and quantum physics could help in designing experiments that bridge these diverse domains. This might involve using advanced technologies like quantum sensors or neuroimaging tools to detect and analyze potential interactions between quantum fields and human consciousness. This would, I am afraid, be far beyond the current attempt by the authors, but they could mention these steps as necessary for a truly scientific engagement with the topic. The authors could outline potential experiments or observational studies that could be conducted to test their hypotheses. Even if current technology doesn't allow for these tests, proposing a theoretical framework for future testing would be beneficial.

Furthermore, I suggest a more thorough engagement with philosophical and theological contexts. Given the subject matter's inherent overlap with theology and philosophy, a more in-depth exploration of how this quantum theory of the soul aligns or diverges from existing theological and philosophical perspectives on the soul might prove to be beneficial.

The manuscript could further be strengthened by anticipating and addressing potential counterarguments, particularly from the fields of neuroscience, psychology, and traditional physics. This would demonstrate a thorough understanding of the subject matter and enhance the manuscript's persuasive power. Let me offer a few examples. Neuroscience has extensively studied consciousness and has often (though not always) located its mechanisms within the brain's physical structure and functions. A counterargument might be that consciousness and, by extension, the concept of the soul, are emergent properties of neural networks rather than quantum phenomena. The manuscript could address this by discussing how quantum phenomena might interface with neural processes. For example, it could explore theories like Orchestrated Objective Reduction (Orch-OR), which posits that quantum processes play a role in neural functions. A discussion of how quantum vibrational fields might interact with neural networks could offer a more integrative perspective.

Another good example comes from psychology. In psychology, concepts like the soul and consciousness are often understood in terms of cognitive and emotional processes. Psychologists might argue that these constructs are better explained through cognitive development, social interactions, and psychological states. Attempts at explaining them on lower levels – such as quantum fields – might result in an unwarranted reductionism. So here again, the manuscript could benefit from examining psychological models of consciousness and self-awareness and proposing how these models

might be complemented or expanded upon by quantum theories. It could also explore how quantum vibrations might influence cognitive and emotional states, bridging quantum physics with psychological phenomena.

By anticipating these counterarguments and providing thoughtful responses or integrations, the manuscript could present a more robust, interdisciplinary approach. This would not only strengthen its persuasive power but also contribute to a more holistic understanding of the soul from both a scientific and philosophical perspective. I do not demand that the authors must do this, but it would be great if they would.

In the end, I wish to commend the authors and encourage them to continue probing this intriguing topic.