Review of: "The Quantum Character of Perception: The Probabilistic and Reversible Thermodynamic Cycle can Produce Spin-like Attitudes, Thinking, and Behavior"

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In this article, based on thermodynamics and the fermionic mind hypothesis, the author further described the quantum character of perception. It is a remarkable and creative work. However, there are still some issues to be clarified.

1. The critical term, Perception, is lack of a clear psychological definition. At least, the author should give a working definition. The author proposed “perception represents a closed thermodynamic cycle and can be modeled via the reversible Carnot engine”. However, it is unclear how this functional definition relates to psychological Perception. After all, perception is a basic term in the field of psychology.
2. It is lack of a clear logic framework. The reader feels confused about induce or deduce logic. Although the title stresses on perception, perception rare appear in the maintext. Mind, conscious, cognition relate to perception but cannot substitute for perception.
3. There are many statements similar to the author’s previous papers while some sentences are lack of evidence. For example, the author stress on “emotions are the brain's homeostatic master regulators”. It‘s too arbitrary. This absurdly results in emotional indivisibility. I confess that emotions interact with cognition but many brain processing can continue without emotions going with, for example, visual stimuli form various perceptions of shape, size, and objects.
4. To avoid confusion, the author should give a clear definition of emotion.
5. Writing is a leap but not influent. For example, the second paragraph of Page 2 did not cite any references. On Page 13, “For example, mental energy loss in introverts might not produce any behavioral symptoms until mental or hormonal disturbances cause psychotic disorders or disease”. It‘s lack of any supportive citations.
6. As for perception, there are many current research and theories including different scales, e.g., behavioral, cognitive neuroscientific, molecular. However, the author ignored them. Thus, the reader did not know how this paper contributes to the related fields, including psychology and brain science.
7. The author mentioned disorders. However, it is unclear how this paper updates the classical psychiatric view of perceptions. That is, how to use the view of the paper to explain psychiatric disorders. How to relate to brain lesion that often bring out misperception?
8. The quantum charter of perception is phenomenological but not mechanical. The paper seemed to give a novel view but did not make some clear predictions. The quantum charter of perception should be verified by multilevel experiments. A good scientific theory can overcome the shortcomings of previous theories but must be falsified. If philosophical speculation cannot be transformed into scientific testability, it is useless at this stage. It is important how

the novel view stimulate new experiements?

9. Some citations are incorrect. For example, on Page 3, Xu & Schwarz, 2017. Moreover, the reference list is lack of consistent format.