

Challenges to Address

1. A classic model easily can explain these findings, so why should I consider an exotic quantum model?
2. The explanations are post hoc, what new predictions are confirmed?
3. Does the quantum model explain more simply because it is more complex and has more parameters?
4. What is the psychological meaning of your quantum parameters? How can these parameters be systematically manipulated?
5. How does the brain do these computations? Isn't the brain too hot to produce quantum effects?

Questions to answer

1. How does one choose the basis states for the Hilbert Space?
Based on the observable outcomes, but there one must be cautious of the possibility of coarse measurements on a higher dimensional system.
2. What constitutes a measurement for cognitive systems? (Can one perform an internal measurement?)
Usually the overt and recordable response
But a person could decide and store in memory and report later.
3. How does one know whether or not two measures commute or do not commute?
Order effects
Interference effects
4. How does one choose a Hamiltonian?
Boot strap from a Markov Model.
5. How do you distinguish a quantum model from a classic model in cognition?
Obtain interference effects that are difficult to explain by classical models. Demonstrate the power to explain across a wide range of phenomena. Explain phenomena in a simpler manner than before.