

## Spaces of Interpretation: Personal Space

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**Abstract :** In quantum theory, a system's time evolution is predictable unless an observer performs measurement, as the measurement process can randomize the system. This randomness appears when the measuring device does not accurately describe the measured item, i.e., when the states characterizing the measuring device appear as a superposition of those being measured. When such a mismatch occurs, the measured data randomly collapse into a single eigenstate of the measuring device. This scenario resembles the interpretation process in which the observer does not experience an objective reality but interprets it based on preliminary descriptions initially ingrained into his/her mind. This distinction is the motivation for the present study in which the collapse scenario is regarded as part of the interpretation process of the observer. By adopting the formalism of the quantum theory, we present a complete mathematical approach that describes the interpretation process. We demonstrate this process by applying the proposed interpretation formalism to the ambiguous image "My wife and mother-in-law" to identify whether a woman in the picture is young or old.

**Keywords :** quantum-like interpretation, ambiguous image, determination, quantum-like collapse, classified representation

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