



## Applications of Quantum Theory Outside of Physics: A multi-dimensional Hilbert space model for data fusion



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### Presentation Abstract

Recently, a group of physicists, psychologists, and computer scientists pioneered the bold idea of applying the abstract principles from quantum theory outside of physics to fields of human decision making and human computer interactions. They did not proceed from the assumption that there is something quantum-like taking place in the brain, but instead they drew inspiration from both the mathematical structure of quantum theory and its associated dynamic principles. This presentation will first introduce the basic principles that we have used from quantum probability theory to model human decision making behavior. Next, several compelling empirical examples will be presented to demonstrate how quantum theory can help explain some of the paradoxes found in human decision research. Finally, a new application of quantum probability will be presented that applies a Hilbert space multi-dimensional model to a problem of data fusion that is encountered when analyzing statistical distributions extracted obtained from big data.

### About the Webinar Series

The **BRIDGE** webinar series is designed to prepare for the next generation of big data analytics, woven into transdisciplinary and intersectoral sciences, policy and innovation, and serving as catalyst for solutions at scale to better address the seemingly intractable problems that lie at the nexus of health and wealth production, distribution and consumption. A key to accelerate change lies in establishing bridges between sectoral big data, and between data and content. To foster real time learning, the **BRIDGE** webinar series brings together a new solution-oriented transdisciplinary translational paradigm for the four *Ms* of big data sciences used on both sides of the health and economic divide (*Machines, Methods, Models and Matter*).