

## The measurement problem: Beetles and cats in boxes

Barnaby Pace, Otago Polytechnic and Southern Institute of Technology

The measurement problem, predominantly well known in the field of quantum mechanics, has far-reaching implications beyond that of the quantum system. This presentation will explore a real world application of the measurement problem, and through a series of ‘thought experiments’ demonstrate that the measurement problem appears in other environments beyond that of theoretical physics. The measurement problem in quantum mechanics is the problem of how and when a wave function collapses. The most well-known analysis of this phenomenon is Schrödinger’s cat, a ‘thought experiment’ which examines how an item can hold multiple states as a superposition, which then collapses on measurement. This paradox will be explored in the context of how we perceive and measure quality within higher education, and at which point ‘quality’ as a concept collapses. Further, exploration will be given to how the observer and the interactions of that observer causes change in the level and depth of the quality being perceived. Finally, potential solutions to the measurement problem beyond the quantum system, but within the realm of education, will be explored.