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On quantum limits of the idea of knowledge as self-location

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There is a strong tradition in epistemology that represents an agent's belief and knowledge via the task of self-location within a set of possible worlds. For the case of an agent's beliefs, the idea is, briefly, as follows: There is a set of possible worlds ("centered" complete epistemic possibilities including the agent's current place and time). Only some of those worlds are compatible with the agent's evidence. So via its evidence, the agent has partial information about where it is. The agent believes exactly what is true in all these worlds compatible with the evidence. Acquiring more evidence means to exclude more possibilities and thereby to acquire more beliefs. Ideally, in the limit, an agent can narrow down these possibilities to just one, thereby completely solving the task of self-location and deciding all questions.

While the self-location model has a clear formal structure and a certain appeal, it faces serious difficulties. A well-known issue is that all necessities would have to be known, which is unrealistic. In my talk I will focus on an issue that is more specific to quantum scenarios: The model assumes that the agent is indeed perfectly located in one possible world. On the standard conception of possible worlds together with a linear temporal ordering, this means that all future outcomes of possible experiments must really be fixed for the agent. I will discuss in how far the self-location model thus amounts to an assumption of hidden variables, and what a more realistic representation in terms of branching possibilities could look like.

Presenter: MÜLLER, Thomas (Universität Konstanz)

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