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## The conceptual and mathematical bases of quantum potentiality and chance

Quantum potentiality, a notion by Werner Heisenberg in his definitive statement of the Copenhagen Interpretation of quantum mechanics, is closely associated with chance and probability. Heisenberg's introduction into modern physics of this notion, which it is associated with the Aristotelian tradition, represents a break with a long development in natural philosophy, and so raises a number of deeply intriguing questions regarding causation and chance in this realm, several of which I have been addressing recently. My lecture will lay out these questions and explore answers to them and their pertinence to explanation in physics.

### References:

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- Gregg Jaeger, "Wave-packet Reduction" and the Quantum Character of the Actualization of Potentia " Entropy 19, 51 (2017).
- Gregg Jaeger, "Quantum Potentiality Revisted " Philosophical Transactions of the Royal Society of London A 375, 20160390 (2017).