

# Determinism Is Ontic, Determinability is Epistemic

Atmanspacher, Harald (2001) Determinism Is Ontic, Determinability is Epistemic.

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## Abstract

Philosophical discourse traditionally distinguishes between ontology and epistemology and generally enforces this distinction by keeping the two subject areas separated. However, the relationship between the two areas is of central importance to physics and philosophy of physics. For instance, many measurement-related problems force us to consider both our knowledge of the states and observables of a system (epistemic perspective) and its states and observables independent of such knowledge (ontic perspective). This applies to quantum systems in particular.

This contribution presents an example showing the importance of distinguishing between ontic and epistemic levels of description even for classical systems. Corresponding conceptions of ontic and epistemic states and their evolution are introduced and discussed with respect to aspects of stability and information flow. These aspects show why the ontic/epistemic distinction is particularly important for systems exhibiting deterministic chaos. Moreover, this distinction provides some understanding of the relationships between determinism, causation, predictability, randomness, and stochasticity.

**Keywords:** ontic and epistemic descriptions, chaos, stability, information, determinism, causation, stochasticity

**Subjects:** [Specific Sciences: Complex Systems](#)  
[General Issues: Determinism/Indeterminism](#)

**ID Code:** 939

**Deposited By:** [Jaeger, Gundel](#)

**Deposited On:** 19 December 2002