

Imaginary-Constitutives. The Ontology of Scientific Models.

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Abstract

Hitherto, there have been two approaches towards models in the philosophy of science. One could be called "formalistic" and the other one "methodological". The first coincides with the so-called semantic view, which employs the notion of semantic models, as used in mathematical logic. The other approach, which became popular through *Models as Mediators* (Morgan and Morrison 1999) is very much based on case studies and inquires into the methodological role models hold in scientific practice. Where the formalistic approach offers a well-defined notion of models but struggles to justify its use for the empirical sciences, the proponents of the methodological approach present us with detailed case studies but fall short of providing a theory of models; their claims reduce to the hardly falsifiable and almost vacant claim that models are "autonomous agents" or "instruments", which "mediate" between theory and the world. Neither the formalistic nor the methodological approach has managed to tackle the ontology of scientific models, which I attempt to provide in this paper in terms of Imaginary-Constitutives.

Keywords: models, semantic view, models-as-mediators, analogies, idealization, abstraction, Bohr model, billiard ball model

Subjects: [General Issues: Models and Idealization](#)

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