

# Scientific Representation: Against Similarity and Isomorphism

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## Abstract

I argue against theories that attempt to reduce scientific representation to similarity or isomorphism. These reductive theories aim to radically naturalise the notion of representation, since they treat scientist's purposes and intentions as non-essential to representation. I distinguish between the means and the constituents of representation, and I argue that similarity and isomorphism are common but not universal means of representation. I then present four other arguments to show that similarity and isomorphism can not be the constituents of scientific representation. I finish by looking at the prospects for weakened versions of these theories, and I argue that only those that abandon the aim to radically naturalise scientific representation are likely to be successful.

**Keywords:** representation, idealization, models, realism, structuralism

**Subjects:** [General Issues: Structure of Theories](#)  
[General Issues: Models and Idealization](#)  
[General Issues: Realism/Anti-realism](#)

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