

Causal models: What do they represent?
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Causal models provide sets of causal relations between variables. They provide generalizations concerning causal relations among these variables. As such they can be “translated” to a set of claims that specify which properties are causally related. These statements express general instances of causation and state general causal regularity or law.

Such statements are different from singular instances of causation, which are claims about actual causal relation, obtained between particular events. They are about actual cause and effect, and not about those properties or types in virtue of which actual and possible instances are causally related.

Causal models can be perceived, on the one hand, as generalizations concerning actual causal relations. Accordingly, they reflect causal knowledge that derive from actual causes (Pearl 2000). Thus, a causal model can be translated into type-level causal claims, which are generalizations concerning token-relations. The nomological relations among properties, exhibited by the model, will be analyzed in terms of regularities and counterfactuals concerning token causation (Hausman 1998, 2005; Woodward 2003).

On the other hand, causal models can be taken as a representation of some nomological relation among properties. In this approach token-causation statements are true *in virtue* of these nomological relations. Thus, causal claims are true within a model, a causal model (Cf. Tooley 1987; Hoover 2001). The truth conditions of a singular instance of causation (a token-causation) are accordingly provided in terms of type-causal relations.

In this paper I will elaborate more on these issues, and at the same time will discuss how such models can provide tools for a rigorous model-theoretic treatment of the differential semantics of causal expressions.