

# Variational causal claims in epidemiology

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## Abstract

The paper examines definitions of 'cause' in the epidemiological literature. Those definitions all describe causes as factors that make a difference to the distribution of disease or to individual health status. In the philosophical jargon, causes in epidemiology are difference-makers. Two claims are defended. First, it is argued that those definitions underpin an epistemology and a methodology that hinge upon the notion of variation, contra the dominant Humean paradigm according to which we infer causality from regularity. Second, despite the fact that causes be defined in terms of 'difference-making', this cannot fix the causal metaphysics. Causality in epidemiology ought to be interpreted according to the epistemic theory. In this approach relations are deemed causal depending on the evidence and on the available methods. Indeed, evidence to establish causal claims requires difference-making considerations; furthermore, those definitions of cause reflect the 'variational' epistemology and methodology of epidemiology.

**Keywords:** causation, epidemiology, medicine, difference-making

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