

A Few Arguments against Counterfactual Accounts of Causation

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The notion of causation is intimately related to that of counterfactuals. For example, an event e might not have occurred if its cause e' hadn't. Two mutually exclusive approaches have been widely discussed. Lewis [5] analyzes causation in terms of counterfactuals. On the contrary, semantics of counterfactuals are developed on the basis of the mechanism of causal entailment (Schulz, [10]).

Following Lewis [5], counterfactual theories of causation normally decompose the causation between two actual events c and e into a chain of actual particular events c, d_1, \dots, d_n, e where each event depends causally on its immediate predecessor. For actuality of the events, causal dependence between d_i and d_{i+1} boils down to counterfactual dependence between occurrences of the two events, i.e. if d_i hadn't occurred, d_{i+1} wouldn't have occurred, either (notation: $\neg O(d_i) \gg \neg O(d_{i+1})$).

Counterfactual analysis intrinsically bears a categorical gap. Despite the classic philosophers' skeptical inquiries, the substantiality encoded in the notion of causation underlies almost every field of science. On the other hand, counterfactuals just form part of natural language and a particular pattern of reasoning. In one word, counterfactuals and causation belong to different categories.

Then, it becomes dubious, in what sense causation is accounted for in terms of counterfactuals. First, counterfactuals can't be the cause of causation, since this claim gives rise to infinite circularity of notions. Also, there is no intuition or theory supporting that the two notions are two different representations of the same entity. Moreover, the categorical gap precludes any conceptual or ontological equivalence between them.

If it's emphasized that equivalence holds between causation and counterfactual *dependence* instead of counterfactual conditionals, another problem would be inevitable, i.e. it's often the causation between actual events at issue while counterfactual dependence involves contrast between the actual world and other possible worlds. So advocates of counterfactual accounts would have to explain how facts about other possible worlds determine or influence causation in the actual world.

Kment [4] suggests that counterfactuals serve as guides to facts about causation rather than constitute them. Counterfactual tests are widely employed to explore causation between event types.

But the truth of relevant counterfactuals do not necessarily follow from the causation between events, as a consequence of over-determination and preemption. Although a variety of enhancements have been made to rescue this illusional connection (Bennett [1]; Hall [2]; Lewis [8]; Paul [9]), elaborate causal structures can always be found to falsify the counterfactuals which are alleged to follow from the particular causation. On the contrary, semantics of counterfactuals built upon causal mechanisms can predict the truth values of counterfactuals in accordance with intuition, given specific causal structures.

Therefore, it can be concluded that the notion of causation underlies semantics of counterfactuals rather than the converse.

References

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