

10.4 Conclusions

We have seen that the property of sustenance (Definition 10.2.1), as embodied in the beam test (Definition 10.3.3), is the key to explicating the notion of actual causation (or “cause in fact,” in legal terminology); this property should replace the “but for” test in cases involving multi-stage scenarios with several potential causes. Sustenance captures the capacity of the putative cause to maintain the value of the effect in the face of structural contingencies and includes the counterfactual test of necessity as a special case, with structural contingencies suppressed (i.e., $W = \emptyset$). We have argued that (a) it is the structural rather than circumstantial contingencies that convey the true meaning of causal claims and (b) these structural contingencies should therefore serve as the basis for causal explanation. We further demonstrated how explanations based on such contingencies resolve difficulties that have plagued the counterfactual account of single-event causation—primarily difficulties associated with preemption, overdetermination, temporal preemption, and switching causation.

Sustenance, however, does not totally replace production, the second component of sufficiency—that is, the capacity of the putative cause to produce the effect in situations where the effect is absent. In the match-oxygen example (see Section 9.5), for instance, oxygen and a lit match are each sufficient for sustaining fire per Definition 10.3.3 (with $W = \emptyset$ and $\overline{S} = \emptyset$); hence, each factor would qualify as an actual cause of the observed fire. What makes oxygen an awkward explanation in this case is not its ineptness at sustaining fire against contingencies (the contingency set W is empty) but rather its inability to produce fire in the most common circumstance that we encounter, $U = u'$, in which a match is not struck (and a fire does not break out).

This argument still does not tell us why we should consider such hypothetical circumstances ($U = u'$) in the match-oxygen story and not, say, in any of the examples considered in this chapter, where sustenance ruled triumphantly. With all due respect to the regularity and commonality of worlds $U = u'$ in which a match is not struck, those are nevertheless contrary-to-fact worlds, since a fire did break out. Why, then, should one travel to such a would-be world when issuing an explanation for events (fire) in the actual world?

The answer, I believe, lies in the pragmatics of the explanation sought. The tacit target of explanation in the match-oxygen story is the question: “How could the fire have been prevented?” In view of this target, we have no choice but abandon the actual world (in which fire broke out) and travel to one ($U = u'$) in which agents are still capable of preventing this fire.⁸

A different pragmatics motivates the causal explanation in the switch-light story of Example 10.3.6. Here one might be more concerned with keeping the room lit, and the target question is: “How can we ensure that the room remains lit in the face of unforeseen contingencies?” Given this target, we might as well remain in the comfort of our factual world, $U = u$, and apply the criterion of sustenance rather than production.

It appears that pragmatic issues surrounding our quest for explanation are the key to deciding which facet of causation should be used, and that the mathematical formulation of this pragmatics is a key step toward the automatic generation of adequate explanations. Unfortunately, I must now leave this task for future investigation.

Acknowledgment

My interest in the topic of actual causation was kindled by Don Michie, who spent many e-mail messages trying to convince me that (1) the problem is not trivial and (2) Good’s (1961, 1962) measures of causal tendency can be extended to handle individual events. He succeeded with regard to (1), and this chapter is based on a seminar given at UCLA (in the Spring 1998) in which “actual causation” was the main topic. I thank the seminar participants, Ray Golish, Andrew Lister, Eitan Mendelowitz, Peyman Meshkat, Igor Roizen, and Jin Tian for knocking down two earlier attempts at beams and sustenance and for stimulating discussions leading to the current proposal. Discussions with Clark Glymour, Igal Kvart, Jim Woodward, Ned Hall, Herbert

⁸Herbert Simon has related to me that a common criterion in accident liability cases, often applied to railroad crossing accidents, is the “last clear chance” doctrine: the person liable for a collision is the one who had the last clear chance of avoiding it.

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