

Addendum to "Mulaik on atomism, contraposition, and causation"

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Between 9 May to 11 June 2012, Professor Mulaik and I discussed my (2012) article in which I question two of his arguments: one against events as causes and effects and the second against the use of conditionals to understand causation. Here, I provide a brief summary of what I see as the constructive developments from that exchange. While I have tried to be as objective as possible -- motivated by a positive interest in constructive criticism of my arguments -- Professor Mulaik and I did not reach anything close to a consensus. What follows represents my understanding of the issues and arguments. I leave it to Professor Mulaik to articulate his understanding as he thinks best.

Professor Mulaik (1986) argued that taking events and causes and effects has the absurd consequence of implying that $P(E|C)$ is independent of $P(\sim E|C)$ where E and C are cause and effect. More precisely, $P(E|C) > P(E)$ fails to entail that $P(\sim E|C) < P(\sim E)$. I showed that if one thinks of a 2×2 contingency table for C and E with each proposition (or event) and its negation as values for one dimension of the table, then it follows from the structure of such contingency tables that the former expression entails the latter. So, it was a mistake to think that taking events as causes and effects has this implication. Professor Mulaik acknowledged this point.

Another source of the confusion seemed to be that Professor Mulaik (1986) focused on the purported independence of E and $\sim E$ and thus overlooked the logical dependence between C and $\sim C$. In the article, I attempted to piece together the most charitable possible reading of Professor Mulaik's argument by linking the above to his critique of logical atomism. I then critiqued the resulting argument on the basis that it mistook $\sim E$ as an atomic proposition. On at least one occasion, Professor Mulaik denied intending such a link. Without linking these two elements of the article, however, the article appears to offer no argument to support the independence claim.

Professor Mulaik's goal was to reject conditionals as a basis for understanding causation in favor of functional relations. This requires an argument that cuts against conditionals but not functional relations. It is helpful, here, to distinguish strong and weak forms of Professor Mulaik's contraposition argument. The strong form states that any logical form that contraposes cannot serve as the basis for an analysis of causation. The weak form states only that any logical form that contraposes into a casual contrapositive cannot serve as the basis for an analysis of causation. In my article, I focused exclusively on the strong form and showed that it failed in its task because it cuts against functional relations as much as conditionals. It was a significant omission that my article did not also consider the weak form. The weak form fails in its task because it fails to apply to material conditionals. For example, the approach of Burks, cited as a sole example by Professor Mulaik, explicitly denies that A cause B entails that $\sim B$ causes $\sim A$.

(although $\sim B$ can entail $\sim A$ based in part of causal reasoning). This holds true because the analysis that all causal claims have the form of material conditionals does not entail the converse that all material conditionals constitute causal claims. Professor Mulaik attempted to repair his argument by adopting the biconditional equivalence between material conditionals and causal claims as a premise of the position he sought to critique. However, it is obvious that it cannot be the case that all material conditionals constitute causal claims (e.g., 'If A then A', 'If A then [A or B]', and 'If [A and B] then A' all seem to provide uncontroversial counterexamples as clearly noncausal material conditionals). As such, this attempt to repair the argument results in an empty straw man argument that fails to apply to any serious theories of causation.

Finally, Professor Mulaik denied that his sentence directed at analyses in terms of causal calculi and modal logics was intended to apply to approaches to causation based on conditionals other than the material conditional such as subjunctive or counterfactual conditionals. The sentence in question is indeed exceedingly vague and I make no claim regarding what Professor Mulaik may have meant by it if indeed the intention was ever clear. My claim is simply that even if contraposition were to offer a valid critique of material conditionals as a basis for analyzing causal claims, such a critique could not extend to contemporary approaches that rest on non-truth functional conditionals (i.e., conditionals with truth functions that depend upon more than just the truth values of the antecedent and consequent of the conditional). Such conditionals generally do not contrapose. If Professor Mulaik's sentence was indeed directed only at causal calculi and modal logics that entail that negated effects cause the negations of their causes, then, again, the criticism fails to apply to any serious theories of causation and appears to constitute a vacuous straw man argument.