

Poisoned Babies, Shot Fathers, and Ruined Experiments

Alexander Max Bauer, 05.09.2023

Roadmap

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A Tale of Three Papers

Actual Causation and Compositionality

Jonathan Livengood and Justin Sysma*

Many theories of actual causation implicitly endorse the claim that if c is an actual cause of e , then either c causes e directly or every intermediary by which c indirectly causes e is itself both an actual cause of e and also an actual effect of c . We think this compositionality constraint is plausible. However, as we show, it is not always satisfied by the causal attributions ordinary people make. We conclude by considering what philosophers working on causation should do when the deliverances of their theories diverge from what ordinary people say.

1. Introduction. In this article, we identify a structural constraint—the compositionality constraint—that is implicitly endorsed by many accounts of actual causation in the philosophical literature, and we present evidence suggesting that the causal attributions ordinary people make sometimes violate the compositionality constraint. In section 2, we articulate the constraint and argue that many accounts of causation in the literature satisfy it. In sections 3 and 4, we argue that there is reason to predict that ordinary causal attributions do not tend to respect the compositionality constraint in all cases, and we put our prediction to the test. Finally, in section 5, we step back to reflect on the compositionality constraint, the goals of philosophical work on actual causation, and the implications of our results.

2. Articulating the Compositionality Constraint. Causation comes in at least two varieties—structural causation and actual causation. Structural causal relations are something like causal laws. They generate patterns of

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*To contact the authors, please write to: Jonathan Livengood, University of Illinois at Urbana-Champaign, e-mail: jlivengood@uiuc.edu; Justin Sysma, Victoria University of Wellington, e-mail: justin.sysma@vuw.ac.nz

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DISCUSSION NOTE

Answers at Gunpoint: On Livengood and Sysma's Revolver Case

Alexander Max Bauer* and Jan Remane†

*Department of Philosophy, University of Oldenburg, Ammerländer Heerstraße, Oldenburg, Germany and
SOCILIM Research Center on Inequality and Social Policy, University of Bremen, Bremen, Germany
†Corresponding author. Email: alexander.max.bauer@uni-oldenburg.de

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Abstract

Jonathan Livengood and Justin Sysma have published a series of studies on “Actual Causation and Compositionality,” in which they investigate causal attributions of laypeople. We use one of their vignettes to follow up on their research. Our findings cast doubt on their conclusion that ordinary causal attributions tend to violate the compositionality constraint if one looks at cases in which someone is responsible for an effect by way of an intermediary that does not share in the responsibility.

1. Introduction

Jonathan Livengood and Justin Sysma have published a series of studies in “Actual Causation and Compositionality.” Theories of actual causation, they argue, often at least implicitly endorse a so-called compositionality constraint: Imagine that someone, let's name him Alrik, set up a row of domino tiles. He gave the first tile a flick, and as the result of a chain reaction, all the other tiles were knocked over, too. The first tile's falling over was directly caused by Alrik's flick. Since subsequently all the other tiles tumbled over, too, Alrik's flick did also cause the last tile in the chain to fall. It was not directly but indirectly caused by Alrik's flick. Here, the flick caused some intermediary tiles to fall, which in turn caused the last tile to fall. This can be expressed in a more abstract way: If we look at some individual events, henceforth denoted as c , d , and e , the compositionality constraint states that, if the event c caused the event e , then it did so either directly, or e did so indirectly via one or more intermediaries d . In this case, every intermediary d is itself an effect of c and a cause of e (Livengood and Sysma 2020, 44).

This compositionality constraint intuitively seems to be a reasonable desideratum for any adequate theory of actual causation. However, whether it is indeed correct, Livengood and Sysma argue, is a different kettle of fish. Arguably, it is not enough to solely rely on the intuitions of a single philosopher or of a small, relatively

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ARTICLE

Poisoned Babies, Shot Fathers, and Ruined Experiments: Experimental Evidence in Favor of the Compositionality Constraint of Actual Causation

Alexander Max Bauer* and Stephan Körner†

*Department of Philosophy, University of Oldenburg, Oldenburg, Germany
Corresponding author. Email: alexander.max.bauer@uni-oldenburg.de

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Abstract

Livengood and Sysma (2020) challenge the compositionality constraint of actual causation (CCAC), according to which each intermediary of a causal chain is an effect of its predecessor and a cause of its successor link. In several studies, they find support for their hypothesis that the CCAC is not in accordance with the ordinary causal attributions of laypeople. We argue that there are three interrelated problems in their studies' design that we call the causality-responsibility confusion (CRC), the intermediary-ontology confusion (IOC), and the case-and-questioning (CQ). Avoiding the CRC, the IOC, and the CQ leads to strong empirical support for the CCAC.

1 Introduction

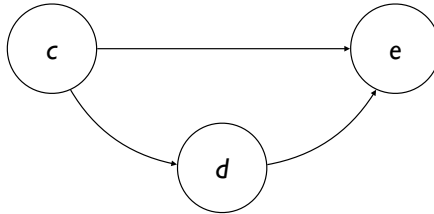
Livengood and Sysma (2020) (hereafter L&S 2020) challenge the compositionality constraint of actual causation (CCAC) that is implicitly entailed by many philosophical accounts of actual causation (e.g., Reichenbach 1938; Salmon 1994; Dowe 1999; Thring 1997; Lewis 1975, 1986; for a brief summary, see L&S 2020, 43–47). They illustrate the CCAC by a chain of dominos. There are two ways a person could cause the last domino in a chain to fall: First, they could cause it directly by flicking the last domino of the chain. Second, they could cause it indirectly by flicking, for example, the first domino of the chain. It then falls against the second domino, which falls against the third domino, and so on, until the last domino of the chain finally falls, too. According to the CCAC, the person causes the last domino to fall in both cases. However, if they do it indirectly, then there must be a number of intermediaries—the falling of one domino against the next one—such that

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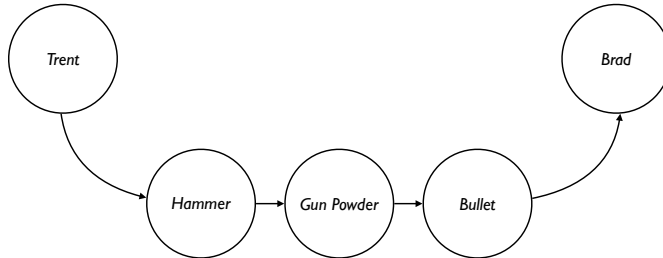
Livengood and Sytsma (2020): Actual Causation and Compositionality

Compositionality Constraint of Actual Causation: If c is an actual cause of e , then either c causes e directly, or every intermediary d by which c indirectly causes e is itself an actual effect of c and an actual cause of e . (Livengood and Sytsma 2020, p. 44)



Livengood and Sytsma (2020): Actual Causation and Compositionality

Revolver Case: Trent has decided to kill his father, Brad. He aims his loaded revolver at Brad and pulls the trigger, releasing the hammer. The hammer strikes the cartridge, igniting the gun powder. The gun powder explodes, driving the bullet from the gun. The bullet hits Brad in the head. He dies instantly. (Livengood and Sytsma 2020, p. 59)



Livengood and Sytsma (2020): Actual Causation and Compositionality

Revolver Case

- $N = 51$
- (dis)agreement on 7-point scale
- 4 statements, i. e.,
 - (A) “Trent caused Brad’s death.”
 - (B) “The hammer caused Brad’s death.”
 - (C) “The gun powder caused Brad’s death.”
 - (D) “The bullet caused Brad’s death.”

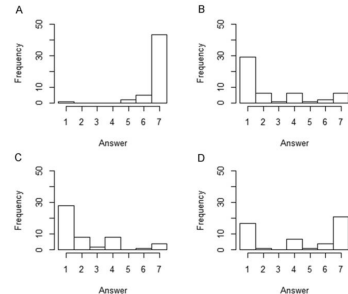


Figure 8. Histograms for study 8. *A*, Trent caused; *B*, hammer caused; *C*, powder caused; *D*, bullet caused.

Bauer and Romann (2022): Answers at Gunpoint

Events

8 different events, i. e.,

- (A) “pulling the trigger”
- (B) “releasing the hammer”
- (C) “striking the cartridge”
- (D) “igniting the gun powder”
- (E) “the gun powder exploding”
- (F) “driving the bullet from the gun”
- (G) “the bullet hitting Brad in the head”
- (H) “the death of Brad”

Bauer and Romann (2022): Answers at Gunpoint

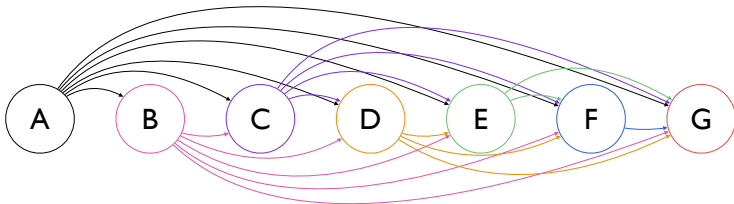
Combinations of events

28 “X caused Y” statements, e. g.,

(A/B) “Pulling the trigger caused the release of the hammer.”

(C/D) “Striking the cartridge caused the ignition of the gun powder.”

(F/G) “The bullet being driven from the gun caused the bullet to hit Brad in the head.”



Bauer and Romann (2022): Answers at Gunpoint

Analogous Statements

- (1) "Trent caused Brad's death."
- (A/H) "Pulling the trigger caused the death of Brad."

- (2) "The hammer caused Brad's death."
- (B/H) "Releasing the hammer caused the death of Brad."

- (3) "The gun powder caused Brad's death."
- (D/H) "Igniting the gun powder caused the death of Brad."
- (E/H) "The explosion of the gun powder caused the death of Brad."

- (4) "The bullet powder caused Brad's death."
- (F/H) "The bullet being driven from the gun caused the death of Brad."
- (G/H) "The bullet hitting Brad in the head caused the death of Brad."

Bauer and Romann (2022): Answers at Gunpoint

Comparison

- $N =$
- (dis)agreement on 7-point scale
- 28 statements

