



## Causation: A User's Guide

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To cite this article: Raffaella Campaner (2014) Causation: A User's Guide, *International Studies in the Philosophy of Science*, 28:2, 221-223, DOI: [10.1080/02698595.2014.932532](https://doi.org/10.1080/02698595.2014.932532)

To link to this article: <https://doi.org/10.1080/02698595.2014.932532>



Published online: 12 Sep 2014.



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**Causation: A User's Guide**

L. A. PAUL and NED HALL

Oxford, Oxford University Press, 2013

xxii + 277 pp., ISBN 9780199673445, £55.00, US\$99.00 (hardback); ISBN 9780199673452, £18.99, US\$35.00 (paperback)

In the past few decades, causation has been the object of increasing philosophical debate involving epistemology, metaphysics, philosophy of science, philosophy of mind, and also philosophical reflections on specific disciplinary fields—e.g. philosophy of physics, biology, law, and the social sciences. L. A. Paul and Ned Hall have played a large part in this debate, with a number of contributions—plus the volume edited with John Collins (Collins, Hall, and Paul 2004)—focusing in particular on the relation between causation and counterfactuals, and the merits and limits of counterfactual analyses of causation. *Causation: A User's Guide* disentangles a number of hard issues arising from contemporary accounts of the nature of causation, and aims to shed light on the intricate web of—sometimes conflicting—intuitions on causation that we nurture.

The book is divided into six chapters, preceded by an annotated list of figures employed throughout the volume to illustrate the cases under examination. The first two chapters clarify the scope of this 'guide to causation', whose aim, among others, is to show how our causal intuitions should be re-framed and used to challenge ways of thinking about causation, identify unnoticed or underestimated features of the causal relation, and test extant theories on the topic. Chapter 2 delimits the confines of Paul and Hall's enquiry, and specifies some of the metaphysical assumptions and methodological choices made in the volume. Causal relata are here taken to be particular events, located in space-time, with singular causal claims hence being the focus. The standpoint assumed is a broadly reductionist one, with the book focusing 'almost exclusively on philosophical treatments of causation that see causal relations among events as somehow metaphysically dependent upon more metaphysically basic facts (concerning what happens, and what the fundamental laws are)' (10). The volume thus sets out to explore whether it is possible to elaborate an ontologically reductive philosophical account of causation, and the suitable forms such an account could take.

Chapters 3, 4, and 5 of this well-informed guide lead the reader through step-by-step analyses of myriad examples involving: redundant causation, including early preemption, late preemption—which the authors consider 'the single most important sort of case in the entire literature on causation' (99)—and overdetermination; causation by omission, including cases in which causes are omissions, effects are omissions, and double prevention; various kinds of threats to the transitivity of causation, related to causation by omission, alternative potential causal pathways, or specific assumptions on the nature of causal relata. The difficult task of exploring such issues in detail is pursued by investigating a remarkable number of counterexamples, devised by Paul and Hall in an attempt to capture some fundamental features of the causal relation. Many different cases, and their variations, are considered, carefully avoiding conflation of similar but distinct issues, and stressing specific aspects of the various

strategies devised to tackle them (e.g. those endorsing a counterfactual, a minimal sufficiency or an intrinsicness account of causation). What competing views put forward in the recent literature are exactly meant to address and the results they can actually deliver are extensively and critically examined. Counterexamples are taken as the most effective tool to delve deep into the necessary constraints of an account handling a variety of complex cases. Problems surfacing with respect to the issues listed above and, more in general, the controversial features of the causal relation are addressed to see to what extent certain views of causation can handle certain sorts of cases. The single issues, underlying assumptions, and possible implications of various philosophical proposals are always treated in considerable depth and detail. Very brief summaries at the end of each chapter would have been helpful to provide some take-home messages while going through the volume, and to fix some fundamental aspects emerging from the analytic discussions and their many subtleties. The concluding remarks elaborated in chapter 6 effectively stress the several sophisticated issues still on the agenda.

The various puzzles of causation arising from counterfactual analyses, and involving circularity, interrelated problems from a variety of preemption and overdetermination cases, transitivity, and many others, are analysed at length and in depth, systematically conducting the reader over a terrain as complex as it is fertile. Paul and Hall's insights rely on neuron diagrams to depict systems of causal relations. Neuron diagrams have a clear representational purpose, while their heuristic role remains controversial: 'neuron diagrams have little ability to suggest new possible structures that have not yet been discovered through the normal processes of counterexamples-seeking' (Hitchcock 2007, 81), on which Paul and Hall's methodology is strongly grounded.

The volume gives a keen sense of the most pressing issues at stake, and clearly shows how no consensus has been reached so far on a vast range of recalcitrant problems. In facing the array of difficulties plaguing metaphysical accounts of causation, Paul and Hall entertain a lively dialogue with the most significant voices in the contemporary debate on the topic, starting from David Lewis, the most prominent defender of a counterfactual analysis of causation. Ample room is then devoted to the proliferation of treatments of causation, to many of the exemplary proposals put forward in the recent literature and their impact on the debate. The leading figures in the scenario Paul and Hall reconstruct include Christopher Hitchcock, Phil Dowe, Michael McDermott, Murali Ramachandran, Judea Pearl, Joseph Halpern, Tim Maudlin, Jonathan Schaffer, Stephen Yablo, and others. Regularity approaches, causal modelling, and contrastive and probabilistic theories are considered to test possible moves and overall rival strategies. Less attention is devoted to other lines of research on causation—such as probabilistic theories, process theories, and theories of causal explanation—which address the volume's main concerns less directly.

Although the volume is accessible to scholars dealing with the problem of causation for the first time, it is more likely to find its privileged readership among experts already trained in the metaphysics of causation—the 'most hardened metaphysicians of causation' (5)—and familiar with the debates on transitivity, event individuation, preemption, trumping, overdetermination, and causation by absence or omission.

It is specifically on these issues that the volume—especially as a ‘*metaphysician’s* guide’ through the puzzles of causation—can be expected to stimulate further discussion, and possibly further reflections on their relevance for non-fictional situations, and for illuminating actual case studies from the sciences. The volume can also be expected to fuel reflections on how ‘doing metaphysics can be understood as a contribution to our overall understanding of the world’ (Paul 2012, 24), and more work on whether a single account of causation will ever be able to fit all varieties of causal relations.

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<http://dx.doi.org/10.1080/02698595.2014.932532>

## Genetics and Philosophy: An Introduction

PAUL GRIFFITHS and KAROLA STOTZ

Cambridge, Cambridge University Press, 2013

viii + 270 pp., ISBN 9781107002128, £50.00, US\$90.00 (hardback); ISBN 9780521173902, £17.99, US\$29.99 (paperback)

The book has several themes, but the main thesis is that gene products are not solely determined by what most people think of as genes, i.e. the coding sequences of DNA. The transcriptome, for example, contains sequence information not literally encoded in the DNA. Where did this information come from, if not from the DNA sequence from which it was transcribed? To answer this question, Paul Griffiths and Karola Stotz persuasively argue that the information comes from ‘the coding sequences, regulatory sequences and their RNA and protein products, and the environmental signals that act via that regulatory machinery’ (5). They provide numerous examples from molecular biology to demonstrate how gene products are partially determined by both the coding sequences of DNA and by the activation and selection of these sequences. Moreover, they show how additional information created during post-transcriptional processing can also help specify the final gene product.

Their argument moves outward, from ‘intra-cellular’ to ‘inter-cellular’ to ‘extra-cellular environmental signals’ (84), showing the impact on the final sequence of