

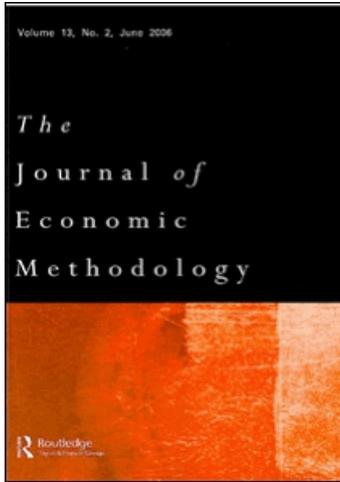
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### Revitalizing causality: realism about causality in philosophy and social science

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remain viable [i.e. meeting the reproduction conditions of a production model] and whether the programming strategy [picked out by a programming model] will actually be followed' (p. 262). Hollis and Nell declare their objection to giving prediction 'pride of place' in economics, and compliment themselves on 'dethroning prediction' (pp. 137–139).

Although Hollis and Nell treat production models as a category in itself, economists who are less attracted to Classical-Marxian theorising might see such models as belonging to the much larger genus of *equilibrium models*. There is a sense in which any equilibrium condition describes a property that a configuration of a given system must have if that configuration is to sustain itself. In game theory, for example, Nash equilibrium can be interpreted as a property of players' beliefs such that, if each player acts on his beliefs, his actions confirm other players' beliefs about him. The specification of equilibrium conditions seems to be another archetypal domain of supposed conceptual necessities. One might interpret the 'refinement programme' of game theory, which absorbed the energies of so many economic theorists in the 1980s, as an ultimately fruitless search for the true essence of self-sustaining beliefs. (Naturally enough, given his methodological position, Hollis became deeply interested in the problems that this programme set out to solve, and began to see himself as capable of contributing to substantive discussions in economics.)

But if the analysis of rational choice and the analysis of equilibrium can both be interpreted as investigations of putative *a priori* truths, what is left of neoclassical economics to be criticised for its failure to follow the tenets of rationalism? Could it be that neoclassical economists have been covert rationalists all along, and that their self-proclaimed allegiance to positivism was no more than an opportunistic reaction to philosophical fashion? At least as far as the more abstract reaches of pure theory are concerned, I suggest that the answers to these questions are 'Not much' and 'Quite possibly'. As Hollis and Nell acknowledge, the original version of Lionel Robbins's *Essay on the Nature and Significance of Economic Science* (Macmillan, 1932) is a manifesto for a rationalist interpretation of neoclassical economics. Hollis and Nell disagree with Robbins's account of the true essence of a market economy, but they approve his methodology (pp. 196–204). Given the enormous influence that Robbins's essay has had on economists' self-perceptions, it is natural to ask whether neoclassical economics might be at least as compatible with rationalism as with logical positivism.

So, I suggest, *Rational Economic Man* succeeds in puncturing the positivist pretensions of many neoclassical economists, but not in showing that neoclassical economics lacks sound philosophical foundations. Which, of course, may be to say only that Hollis and Nell's relationship to neoclassical theorising is that of companions in guilt.

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**Revitalizing causality: realism about causality in philosophy and social science**, edited by Ruth Groff, London: Routledge Taylor & Francis, 2007, 288 pp., \$150.00 (hardback), ISBN 978-0415-37218-3

If talk about 'causal powers', 'dispositions', 'essences' and 'capacities' makes you squirm then you may want to avoid Ruth Groff's *Revitalizing Causality: Realism about Causality in Philosophy and Social Science*. But then again, if you feel this way because you have been raised on a steady diet of Humean causality, then this book might have just what you need.

In general, realism about causality involves theorizing about what causes are. As it is widely known, Hume believed that it was our custom and habits that made us ‘expect’ causal relations between relata (in his case, events). Though our expectations make us feel as though we are experiencing causal relations, Hume’s strict empiricist epistemology implies that we cannot ‘know’ causes. This influential anti-realist position implies that all we can know about causal relations are contiguity, priority and constant conjunction. It is in stark contrast to this Humean orthodoxy that *Revitalizing Causality* makes claims such as: ‘... it is a matter of the powers that things have, in virtue of what they are, to affect other things, given what the other things are’ (p. 2); ‘To say “x caused y,” or “x is the cause of y,” is to express our common-sense conviction that there is something *about x* that made it be that y happened’ (p. 2). Because realists about causality believe that entities have dispositional properties, Groff asserts that they are committed to some degree of ontological realism. Moreover, she explains that realism about causality escapes certain forms of relativism: ‘... realism about causality also precludes relativism about knowledge – for if the world is not all possible ways, then all competing claims about it cannot be equally sound’ (p. 4).

One striking feature of this volume is that, although it is a part of the wider *Routledge Studies in Critical Realism* (that includes 17 other volumes), Groff states in the introduction that, ‘... only two or three of the contemporary contributors to this volume would be likely to identify themselves as critical realists ...’ (p. 8). While this is the likely reason that ‘critical realism’ is not found in the volume’s title, it is the sort of gaffe that has implications for understanding Groff’s choice of contributors. Some economists and other social scientists are inclined to wonder, if the book concerns realism about causality more generally and not just critical realism, why are, say, analytic philosophers of science (for example: Kevin Hoover, James Woodward, Nancy Cartwright, etc.) omitted from this volume. This is especially puzzling because Groff clearly demonstrates her openness to integrating realisms about causality when she states, ‘... I believe that as interest in critical realism continues to grow internationally, the approach ought to be brought into closer contact with – and ideally integrated into – larger, directly relevant neo-Aristotelian currents within metaphysics and the philosophy of science’ (p. 8).

Given that this review is likely to be read by people interested in methodological and philosophical reflections concerning economics, I should point out that, although the volume currently under review is directed to an audience of social scientists, it does not say much about causal realism or causality in economics *per se* (granted, this may not have been imperative to the Editor of this volume because economists occupy only a segment of this targeted population). For one, the increasingly important wave of interest in critical realism from the heterodox quarters of economics is ignored in this volume. To be fair though, Routledge does have another volume (in this series), entitled *Critical Realism in Economics*. But, even so, it is surprising to see that, for better or worse, Tony Lawson’s (1997, 2003) popular works on critical realism, and the growing literature that has stemmed therefrom, is nowhere to be found in *Revitalizing Causality*. The result of such exclusion may be that some readers hoping to engage the literature on causality in economics will be disappointed. Other economists, however, may be pleased with the work currently under review, if not for entirely different reasons. Marxists, for example, will celebrate a more than adequate representation with two papers, entitled ‘Marxian Crisis Theory and Causality’ (by Robert Albritton), and ‘On the Clear Comprehension of Political Economy: Social Kinds and the Significance of section 2 of Marx’s Capital’ (by Howard Engelskirchen). Thus, I recommend this volume to economists and philosophers interested in causal realism at an abstract philosophical

level, certain Marxists, but not to those who want to explicitly read about causal realism in relation to economic theorizing.

Groff's introduction is well written and is worth reading. It allows the reader to make an informed decision about which essay(s) to read (if she wants to pick and choose). Following the introduction, the book is neatly divided into three parts: I. Key formulations; II. Realism about causality in philosophy; and III. Realism about causality in the social sciences. Part I includes some older and previously published articles that Groff suggests make up '... touchstones in the development of realism about causality' (p. 4). In the first essay Roy Wood Sellars distinguishes a critical realist from a 'naïve realist' in two ways: '(1) he is aware of the mechanism making knowledge possible and not, as the naïve realist, only of the result; and (2) he is led by reflexion to revise the content of knowledge, that is, *the object of thought*' (p. 13). While naïve realism comes to a full stop at the qualities revealed by the senses, Sellars argues that, for the critical realist, 'Knowing finally turns out to be a grasping of the structure, composition, relative sizes, connexions and behaviour of things rather than that of sensory qualities' (p. 22). The second paper, also by Sellars, is entitled 'Causality and substance'. Here, Sellars is at his best when confronting the Herculean task of integrating epistemology and ontology. He claims '... knowledge, being, and the categories, are both causally and formally connected. They are reciprocally elucidating. Being without categorical characteristics is scarcely thinkable; and in knowledge-claims, being is characterized through categorial meanings. In this fashion all three are tied together' (p. 27).

The other three essays that make up Part I include works by Irving Copi, Rom Harre and E.H. Madden and Brian Ellis. Diverging from the philosophies of Locke and Aristotle, Copi argues that essences *can* be known. He states, 'Contrary to Locke, I should hold that real essences are in principle knowable, and contrary to Aristotle, I should hold that non-essential or accidental properties can also be objects of scientific knowledge' (pp. 52–53). Furthermore, Copi claims that the 'real essence' of entities is tied to the powers or dispositional properties that they have. Harre and Madden begin their essay entitled 'Conceptual and Natural Necessity' rather provocingly, stating, 'There can be no doubt that the Humean conception of causality and its linear descendant, the Regularity Theory, must be wrong' (p. 56). Henceforth, they aim to establish '... an alternative analysis which makes sense of science and common sense' (p. 58). Central to their project is a distinction between four modes of necessity: logical necessity, transcendental necessity, natural necessity and conceptual necessity. The first two are modes of necessity attributable to the *a priori* method, while the latter two are attributable to the *a posteriori* method. A statement that cannot but be true is a logical necessity. They describe transcendental necessity as when '... the conditions for a rational being having knowledge of the nature of a world are offered as the grounds for the judgement that such a world must have certain characteristics ...' (p. 71). Natural necessity takes place when a certain effect derived from 'the operative powerful particulars' cannot but happen, like when a non-defective grenade is ignited, and all of the necessary background conditions are met, it must explode. Finally, conceptual necessity arises,

When the discovery of natural necessity is used as the basis for the inclusion or exclusion of the appropriate predicate in the meaning of a concept of a kind of particular, then that kind of particular has the property of power to produce the effect ... (p. 71).

Next, in his 'Powers and Dispositions', Brian Ellis discusses the 'dead world of mechanism' and distinguishes the various antithetical theses as generally accepted by essentialists and Humeans. On causation he states,

For Hume, and for all latter-day Humeans, an instance of causation is just an instance of a universal regularity of some kind. Therefore, if the laws of nature were different, and the regularities that existed were consequently different, the dispositions of things would no longer be the same. For essentialists, however, the dispositions of things depend on the intrinsic causal powers or capacities of their most basic constituents, and on how these constituents are arranged (p. 81).

Ellis suggests that, among other things, essentialists think inanimate matter is active; the actions of things depend on causal powers; dispositional properties are genuine properties that are not just qualities *à la* Locke, but are intrinsic to the things that have them; and the laws of nature describe how members of natural kinds are logically required to act. Humeans, on the other hand, think inanimate matter is passive; things behave as required by laws of nature; dispositional properties, including causal powers, are not knowable properties; and, the laws of nature are contingent, not necessary.

Part II contains six impressive essays on realism about causality in philosophy, the first of which is a reprint of Christopher Norris' (2006) Chapter 2 in *On Truth and Meaning: Language, Logic and the Grounds of Belief*. Given the extensive historical account of causal explanation that covers the works of many key contemporary philosophers, including Quine, Kuhn and Putnam, Norris' chapter is the crown jewel of Groff's book. Arguing contra Hume's anti-realist metaphysics and those who would defend it, Norris claims, '... causal realism and inference to the best explanation represent the only viable alternative to the kinds of dilemma thrown up by logical empiricism' (p. 102). Charlotte Witt's 'Aristotelian Powers' is a wonderfully accessible piece that argues '... the central role of teleology in Aristotle's ontology of causal powers sets his views apart from many contemporary versions of realist theories of causal powers'. Along the way, Witt effectively ties contemporary concerns for realism about causality with its Aristotelian genesis. In Chapter 8, Stephen Mumford investigates the relation between power, disposition and property and concludes that power and disposition are equivalents. Mumford conjectures that causes could be the shifting about of powers – a conclusion that, Groff asserts, would render the laws of nature philosophically superfluous. Next, Anjan Chakravartty has a word of caution for would-be converts to causal realism, claiming that 'Some Aristotelian notions, such as the concept of a causal power, may well be useful to modern studies. Others, such as the notion that causal powers are determined by essences which comprise the nature of things, are outmoded by many sciences today' (p. 152). Chakravartty concludes that the behaviour of things is determined not only by what some would call its 'essential' causal properties but local environmental conditions as well. Alexander Bird claims that emergent properties have the same sort of causal efficacy as is attributed to non-emergent properties; they are not composed out of the same properties of physics and yet they are the properties of physical entities. Bird argues for the irreducibility of emergent properties in evolved organisms, and further suggests that these are genuinely natural. In the last essay of Part II, Rachel Cooper explores the ambitious task of discovering natural kinds in psychology, and she concludes in the affirmative. The natural kinds that Cooper encourages us to accept include 'normal human pain' and 'normal human affect programs'. The implications of her position may sound astonishing to contemporary economists, because it implies the existence of laws and the possibility of explanations that, '... are scientific in the same sort of way as those found in, say, chemistry' (p. 179).

Finally, Part III is comprised of four pieces dedicated to exploring causal realism in the social sciences. It includes contributions by Douglas V. Porpora, Andrew Bennett, Robert Albritton and Howard Engelskirchen. Porpora argues that sociologists largely ignore the concept of causality – a claim that is likely to ring true for many economists. Indeed,

as if Porpora were writing about causality in economics, he claims ‘... empiricism, this paper will show, stifles conceptual thought about causality, yielding in the end only the most meagre understanding of causality, an understanding shared ironically enough by both supporters and critics of an enduring positivism’ (p. 195). He goes on to argue that while conceptual arguments about causality are ongoing in philosophy, sociology seeks to avoid such uncertainty – a ‘... conceptual controversy that might detain us from data collection’ (p. 196). If one follows Porpora, it seems that sociology shares much with economics in terms of their positivist legacies that trained practitioners of these sciences to largely ignore any sort of realism about causality. Wading through the debates regarding the proper scientific standing of political science, Bennett argues in Chapter 13 that the identification of causal mechanisms should be an explicit objective of political and other social scientists. He covers a lot of ground in this short paper. First, he defines causal mechanisms ‘... as ultimately unobservable physical, social, or psychological processes through which agents with causal capacities operate in specific contexts to transfer energy, information, or matter to other entities’ (p. 207). Then he explores whether causal mechanisms as developed in the natural sciences are relevant to the social realm, confronts the debates over emergent properties with respect to causal mechanisms, and discusses whether the reorientation of the social sciences around causal mechanisms spells the end of grand ‘isms’.

As noted above, the essays by Albritton and Engelskirchen concern realism about causality through the lens of Marxist philosophy. Although neither author is an economist, their works should not be dismissed by those with Marxian predilections. With that said, for some non-Marxists, these two pieces could be challenging to follow as unfamiliar concepts are, at times, inadequately introduced. Albritton aspires to elucidate the unique ontology of capital, suggesting this is something Roy Bhaskar failed to do. In ‘... presenting an account of crisis theory in Marxian political economy based on a brief account of capital’s unique ontology ...’ (p. 221), Albritton distinguishes between dialectical causality, structural causality and historical causality – a position of determinate conceptual pluralism that he suggests is mandated by the complexity of history. Similar to Cooper’s project, Engelskirchen aims to extend natural kinds beyond those invoked by the natural sciences. He responds to Richard Boyd’s argument suggesting that natural kinds are applicable to the study of social phenomena by embarking on a valiant effort to explore Marx’s presentation of commodity in *Capital vis-à-vis* a ‘natural kind analysis’. Concluding, Engelskirchen asserts, ‘Marx’s analysis may be understood to foreshadow today’s sophisticated scientific realism’ (p. 242).

Through an illuminating exposition of diverse topics, this volume of collected essays effectively connects the reader to much of the key literature on causal realism and beyond. Although *Revitalizing Causality* may not find a convivial audience among *all* economists (then again, what does!), it will attract many with a deeper philosophical bent, mostly because it really is a timely contribution to the literature on causal realism. I have just one final remark. Groff acknowledges the current disunity in the literatures on realism about causality (as mentioned above), and Cooper makes a similar observation in her essay. Cooper explains that since the 1970s the tradition of causal realism has effectively split into two: ‘... on the one hand a body of work in analytic philosophy of science, and on the other the movement known as critical realism ... Analytic philosophers of science neither cite nor discuss critical realists, and critical realists tend similarly to ignore work in the analytic philosophy of science’ (p. 180). For the purpose of integration, it would have been valuable for Groff to have gone one step further by including one or two essays on causal realism from the standpoint of analytic philosophy of science. This would have widened the readership and, perhaps, facilitated the transfer of certain knowledge. For example, the

recent work concerning conceptual pluralism about causality (including Hitchcock 2003; Cartwright 2004; Reiss in press) seems particularly applicable to *Revitalizing Causality* where, arguably, this kind of pluralism also exists (for instance, Albritton's dialectical, historical and structural causalities) but remains unexamined.

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**The cult of statistical significance: how the standard error costs us jobs, justice, and lives**, by Stephen T. Ziliak and Deirdre N. McCloskey, Ann Arbor: The University of Michigan Press, 2008, 352 pp., US\$24.95 (paperback), ISBN 978-0-472-05007-9

We begin with a simple example to illustrate the key methodological issue of statistical significance which is extensively discussed in this new book by Ziliak and McCloskey and the subject of a recent debate in the *Journal of Economic Methodology* (Hoover and Siegler 2008a; McCloskey and Ziliak 2008; Hoover and Siegler 2008b).

Suppose an economics researcher hypothesizes that a parameter  $\theta$  takes the true value of  $\theta_0$  and she would like to test whether there is any discrepancy between  $\theta_0$  and an estimate  $\hat{\theta}$  of  $\theta$ . Formally, one is interested in whether the difference between the estimate and the hypothesized true value is 'close to zero' or  $|\hat{\theta} - \theta_0| \approx 0$ . In regression testing, this parameter is the coefficient of an independent variable  $x_{ik}$  and is denoted by  $\beta_k$ . The typical test in econometrics would involve testing this parameter using a  $t$ -statistics, given by  $t_{\hat{\beta}_k} = \hat{\beta}_k / se(\hat{\beta}_k)$ , where  $\hat{\beta}_k$  refers to the estimated parameter of the variable and  $se$  refers to the standard error. For example, given that  $\hat{\beta}_k = -0.00025$  and  $se(\hat{\beta}_k) = 0.00005$ ,  $t_{\hat{\beta}_k} = -5$  which is statistically significant at a very small significance level. However, the size of  $\hat{\beta}_k$  is small and negative: an increase of 10,000 units of the independent variable will lead to a fall in the dependent variable by only 2.5%. In other words, the parameter value has little economic significance though it is statistically significant. With large samples, it is possible to reduce the standard error to a value smaller than the coefficient estimates, resulting in statistical significance. In reporting this, most practitioners would just tabulate the values parameters and the associated  $p$ -values below in brackets, accompanied by asterisks: \*\*\*, \*\*, \* denoting  $p < 0.001$ ,  $p < 0.01$  and  $p < 0.05$  respectively. Discussions of the results focus largely on the statistical significance as determined by the  $p$ -value and statistical significance is often equated with economic significance.