CAUSATION: A PREMATURELY DEPOSED MONARCH?

Chad Trainer
1006 Davids Run
Phoenixville, pa 19460, usa
stratoflampsacus@aol.com

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In 1911 the Aristotelian Society elected Bertrand Russell its president, and in November of 1912 Russell's presidential address to the Society was "On the Notion of Cause", which, in addition to being published in the Society's *Proceedings*, was later included in Russell's book *Mysticism and Logic*.

Russell's address to the Aristotelian Society occurred during an interesting, brief era in the history of physics. This was a stage after the science of gravitational astronomy had benefited from the use of differential equations but before the British physics community was aware of the German physicists' advances. Less than three years after Russell delivered "On the Notion of Cause", Einstein revolutionized the field of gravitational astronomy; and the quantum physicists were to eventually unearth phenomena that proved to be especially recalcitrant to comprehensive mathematical analysis. At the time of "On the Notion of Cause", though, physics was understood as providing a thorough account of all the phenomena within its domain.

In this address, Russell speaks of how

> Certain differential equations can be found, which hold at every instant for every particle of the system, and which, given the configuration and velocities at one instant, or the configurations at two instants, render the configuration at any other earlier or later instant theoretically calculable. … This statement holds throughout physics, and not only in the special case of gravitation. *But there is nothing that could be properly called "cause" and nothing that could be properly called "effect" in such a system*.… [T]here is merely a formula. (*ML*, p. 194, *Papers* 6: 202; my emphasis)

Russell further remarked:

> All philosophers, of every school, imagine that causation is one of the fundamental axioms or postulates of science, yet, oddly enough, in advanced sciences such as gravitational astronomy, the word 'cause' never occurs…. To me it seems that … the reason

why physics has ceased to look for causes is that, in fact, there are no such things. The law of causality, … like much that passes muster among philosophers, is a relic of a bygone age, surviving, like the monarchy, only because it is erroneously supposed to do no harm. (*ML*, p. 180; *Papers* 6: 193).

What Russell has in mind here when saying "in advanced sciences such as gravitational astronomy, the word 'cause' never occurs" is that it is rash to infer from the observation of particular uniformities that there necessarily is a legitimate apriori category of causality (*ML*, p. 205; *Papers* 6: 209). Rather, "the law of causality, as usually stated by philosophers, is false, and is not employed in science" (*ML*, p. 207; *Papers* 6: 210).

Huw Price and Richard Corry's *Causation, Physics, and the Constitution of Reality: Russell's Republic Revisited* features thirteen chapters from different contributors (except for Huw Price who authors one and co-authors another) who address different aspects of this matter. Price and Corry explain:

One key theme of the volume turns on the possibility that in presenting philosophy with a stark choice between finding causation in physics and rejecting it altogether, Russell missed an important range of intermediate views. In particular, he missed what, by a natural extension of his own constitutional analogy, we may call *the republican option*. In the political case, rejecting the view that political authority is vested in our rulers by God leaves us with two choices: we may reject the notion of political authority altogether; or we may regard it, with republicans, as invested in our rulers by us. Arguably, the republican option exists in metaphysics, too. Causal republicanism is thus the view that although the notion of causation is useful, perhaps indispensable, in our dealings with the world, it is a category provided neither by God nor by physics, but rather constructed by us. (From this republican standpoint, then, thinking of eliminativism about causality as the sole alternative to full-blown realism is like thinking of anarchy as the sole alternative to the divine right of kings.) (Price and Corry, p. 2)

The editors' depiction of Russell's philosophy of causation is, however, limited to the Aristotelian Society paper, "On the Notion of Cause". Russell was later to revise and even recant cardinal points about causation made in this paper, but it is to "On the Notion of Cause" that Price and Corry's book confines the discussion and analysis of Russell's philosophy.

However, to say that it is to "On the Notion of Cause" that Price and Corry's book limits discussion and analysis of Russell's philosophy is not to say that Russell's philosophy in "On the Notion of Cause" is even the book's primary theme. Rather, the extent to which each contributor is concerned specifically with Russell's views on causation varies from some having Russell's views as their focal point to others making a merely token acknowledgement of him or even no acknowledgement at all. Russell's philosophy of causation serves not so much as the book's chief concern as it does a majority of the contributors' *pro forma* point of departure.

John D. Norton of the University of Pittsburgh explains: "In crude analogy, seeking causation in nature is akin to seeking images in the clouds. Different people naturally see different images. And different clouds incline us to seek different images. But once an image has been identified, we generally all see it. Moreover, the image is not a pure fiction. It is grounded in the real shape of the cloud; the nose of the face does correspond to a real lobe in the cloud" (Price and Corry, p. 32).

As Norton sees it, a symptom of the scientific world's failure, on a basic level, to provide sufficient support for notions of causation is the need to refrain from discussion of cause and effect when we are in need of the utmost precision from the sciences. Under such circumstances, we resort instead to such carefully crafted considerations as gravitational forces, voltages, and temperatures rather than "causes" (pp. 13 –15). Nevertheless, "ordinary scientific theories can conform to a folk science of causation when they are restricted to appropriate, hospitable processes …" (pp. 12–13). And Princeton University's Adam Elga draws attention to Russell's focus on dynamical laws as the impasse to the reconciliation of the folk model of causation and fundamental physical laws (p. 118).

According to Oxford University's Antony Eagle, the irony of the situation is that an emphasis on determination in the basic law of causality precipitated the abandonment of causality as not up to the task of explaining determination (p. 176). He characterizes as "Russell's real challenge to causation" the problem that "even if we can show how to systematically interpret causal talk so that it is *compatible* with fundamental physics, it remains true that causal talk is essentially *dispensable* once we possess fundamental physics" (p. 173). Eagle calls this the "causal exclusion problem" (*ibid.*). The crux of the problem for him is that, within the realm of deterministic physics, the value of causal models is inversely proportional to the comprehensiveness of the account involved. Thus, the causal factor presupposed in a given counterfactual claim, for example, has genuine value only at the expense of prescinding from the totality of reality. That is to say, not only are *entire* physical explanations of *entire* physical events inherently more valuable than their *partial* counterparts, but the former are completely accurate where the latter are merely approximately so. Against the backdrop of these considerations, the inherently trivial role Russell accorded causality is easier to appreciate (pp. 173–6).

For Eagle, however, the causal vernacular figures among life's condonable practical requirements not necessarily committing its users to any particular metaphysic. What is more is that causal accounts are more useful than the comparatively remote and abstract considerations of the physicist's ontology cited by Russell as grounds for not recognizing causality: "Causal explanations … provide a pragmatically essential handle on the physical facts, showing fundamental science to be continuous with our intuitions in some important sense, and supporting our self-conception as agents and our conception of the world as one

among many possibilities …" (p. 177). Eagle sees causal explanations as enjoying a genuine utility in counterfactual, or hypothetical, reasoning. He takes the position that such utility in folk science is reconcilable with Russell's misgivings about causation in the most advanced science (*ibid.*). Rutgers University's Barry Loewer also weighs in on this topic, discouraging us from understanding Russell as though he were counselling an eschewal of causal locutions. It is Loewer's contention, rather, that Russell's point was that causation is not to be viewed as a fundamental relation, lest it lead to "philosophical confusions" (p. 297).

In "What Russell Got Right", California Institute of Technology's Christopher Hitchcock agrees with Russell's point that the manner in which the word "cause" is employed can be misleading (p. 61), and he sees Russell as having been most certainly correct on this score (p. 48). Although Hitchcock contends that the incoherence of causality is not necessitated by the absence of "causes" from sciences like gravitational astronomy (p. 57), he maintains that Russell's arguments have worthwhile insights even if we are to reject Russell's primary conclusion (p. 45). What is important is not so much getting rid of the word "cause" as introducing more nearly accurate words for describing causal ideas (p. 62). Hitchcock calls for developing "useful taxonomies for causal relationships" (p. 59). And he encourages us to take Nancy Cartwright's lead in appreciating the indispensability of the idea of causation not so much on account of it being key to science but because "the distinction between causal relationships and non-causal relationships grounds the distinction between effective and ineffective strategies" (p. 57).

For University of Sydney's Huw Price causal judgments are *perspectival* (p. 286) and "the conclusion that causal laws are indispensable comes with a qualification: *as long as we continue to deliberate*. In practice, of course, this qualification makes little difference" (p. 288). Price has a particularly interesting discussion of how

> … a divine creature … able to intervene at will at arbitrary points of a spacetime arena … must share our limitations in one respect, if it is to think of itself as deliberating at all. It must be sufficiently ignorant for the notion of choice to make sense, by its own lights…. [F]ar from being omnipotent, an omniscient creature *could not deliberate at all*…. [I]f science aims for the god's-eye point of view, then Russell was right and science has no place for causation…. [I]n a deterministic world all probability is epistemic …, and we need it only because we are ignorant…. Once we appreciate that agency depends on ignorance, we see that causation becomes epistemic in a similar way. Again, it is a way of thinking about the world that we need because we are not gods. (Pp. 282–4)

Price shares Russell's support for Humean science. However, he parts ways with Russell to the extent that he sees Russell as failing to distinguish between something not being *real* and something not being *as real as we thought*. For Price, there are human discoveries of the sort where we eventually find phlo-

giston, or a unicorn, say, to not exist. A different type of human discovery was involved relative to foreigners, for example, in that foreigners were discovered not to be non-existent but to be a concept that is *perspectival*. Causation is similarly "perspectival", as are "up and down", the "rising" sun and the like (p. 290). As a "modest, pragmatic, agent-centered view of causation", "perspectivalism … foments revolution, but a quiet revolution, in the spirit of Kant's Copernican revolution, that avoids the mysteries of 'monarchist' metaphysics without the anarchic nihilism of causal eliminativism" (p. 291).

With the exception of Norton, the book's contributors exhibit no interest in Russell's reflections on causation after "On the Notion of Cause". Norton rightly observes that, by the time of *Human Knowledge*, Russell's treatment of causation was "far less skeptical" (p. 37). Yet even Norton's observation is only in passing.

Up to a point, Russell's life-long loathing of pragmatism probably prompted him to cast a critical eye on any belief in causation grounded simply in our abilities to distinguish between effective and ineffective strategies. One can readily envision him viewing the pragmatic advantages of belief in causation as yet one more distraction in the attempts to discern truth. For he considered as perhaps pragmatism's fundamental defect its contentment with beliefs affording satisfactions quite distinct from the specifically *theoretic* satisfaction sought by science. However, even the Russell of 1912 would probably have not opposed the employment of causal models for heuristic purposes, provided the misguided metaphysics presupposed were completely clarified.

Russell's own philosophy became increasingly receptive to beliefs in causes in both pedagogical and metaphysical veins. The later Russell acknowledged the utility of a deterministic causality in aiding scientific investigators.[1]

Far from dismissing causation as untrue or as a relic of a bygone age, Russell continued to speak as though there were *causes*. Fifteen years after "On the Notion of Cause", Russell came around, in his *Outline of Philosophy*, to believing that causal laws are not apriori but an *empirical* fact.[2] Over twenty years after "On the Notion of Cause", he asserts in his *Religion and Science* that "The discovery of causal laws is the essence of science.… [T]he maxim that men of science should seek causal laws is as obvious as the maxim that mushroom gatherers should seek mushrooms" (*Religion and Science*, pp. 146–7).

When the new methods of quantum mechanics challenged determinist philosophy, Russell, like Einstein, remained in the determinist camp. Although Russell thought it unwise of the scientist to make claims to *knowing* that there are *always* causes, he thought it much more unwise to lay claims to knowledge

[1] *Religion and Science* (London: Thornton Butterworth, 1935; reprinted New York: Oxford U. P., 1961), pp. 145–6.

[2] *An Outline of Philosophy* (London: Allen and Unwin, 1927), p. 156.

of areas where causes do *not* operate.[3] "Causality ... whether universal or not, is a suitable and unavoidable working hypothesis in all scientific investigation."[4]

Thus, Russell's later views on causation stand in marked contrast to those which Price and Corry's *Causation, Physics, and the Constitution of Reality* show him as holding in 1912. To extend Russell's own constitutional analogy in "On the Notion of Cause", the law of causality in Russell's later thinking takes the form not just of a monarchy doing no harm but of a monarchy that, in this later day and age, is downright requisite to reinstate as capable of providing positive good.

[3] *Religion and Science*, pp. 167–8.
[4] Russell, "Determinism and Physics" (1936), in *Papers* 10: 80.