

***The Rule of Reason: The Philosophy of Charles Sanders Peirce*, edited by Jacqueline Brunning and Paul Forster. Toronto: University of Toronto Press, 1997. Pp. x, 316.**

The title of this collection of essays is doubly apt. First, we may think of reason *as* rule, that is, as a learned pattern of self-control. Peirce saw reason as a variety of self-control directed specifically towards the end of maximising truth:

Logical goodness and badness...amounts, in the last analysis, to nothing but a particular application of the real general distinction of Moral Goodness and Badness...To criticize as logically sound or unsound an operation of thought that cannot be controlled is not less ridiculous that it would be to pronounce the growth of your hair to be morally good or bad” (1903, p. 196)

Alternatively however, we can read “rule” in the sense of “rule over”. Then the title describes a life lived in the service of reason, which is a good description of Peirce, who once wrote, “From the moment when I could think at all, until now, about forty years, I have been diligently and incessantly occupied with the study of methods [of] inquiry”, and, “I cannot lay claim to the slightest merit for the constancy with which I have pursued it, since it has been an uncontrollable impulse”.

This collection suffers from the patchwork quality which has been a feature of collections on Peirce, given the extremely broad scope of his interests, and the fact that since his death in 1914 he has remained an enigmatic outsider with respect to the development of Anglo-American philosophy. The introduction by Brunning and Forster merely describes the choice of papers as, “devoted to outstanding issues and difficulties in Peirce’s philosophy”.

The book kicks off with an article by Jaako Hintikka (“The Place of C.S. Peirce in the History of Logical Theory”), who has a big idea: that there exist “two contrasting visions of language and its relations to the language user and the world” (p. 14). These he labels “language as the universal medium”, and (the model-theoretic) “language as calculus”. The views differ over whether one can express a language’s “semantic relations to the world” in that language, “without committing nonsense or tautology”.

Hintikka traces universalism through Frege, Russell, Wittgenstein to Quine (and also Heidegger). Language as calculus he sees as epitomised in the work of Tarski, Goedel and

Carnap. Hintikka swiftly stuffs Peirce into the second box, then moves on to consider the question of why Peirce's contribution to the development of modern logic is so little known. (The standard symbols for quantification, for instance, are not Frege's appalling squiggles, but Peirce's, modified by Peano). Hintikka blames the universalist tradition (especially Quine) for creating its own antecedents.

A particular blind-spot for this tradition is modal logic for, Hintikka reasons, "If language...cannot be reinterpreted, it can be used only to speak of one and the same world...our actual world" (p. 18). Thus, Peirce's pioneering work in modal logic, which greatly influenced C.I.Lewis, left him off Quine's intellectual ("desert") landscape.

In "Inference and Logic According to Peirce", Isaac Levi considers why over the years between 1865 and 1902 Peirce changed his delineation of logic. In 1865 Peirce considered that logic embraced deduction, induction and hypothesis-formation (or "abduction"). By 1902, however, his vision had broadened to include the methodology of inquiry. By then, abduction, deduction and induction were no longer defined formally (as particular permutations of the classic syllogistic form), but *functionally*, as stages in living movements of inquiry.

Levi compares Peirce's conception of logic with that of Frege and concludes that although the two visions seem superficially similar in their disavowal of "psychologism", they differ over where psychologism starts. Where Frege thought that considering a subject's background beliefs was unacceptably psychologistic, (and thus the famous apparently ampliative Morning Star/Evening Star arguments became a philosophical problem for him) Peirce disagreed, and dealt with such cases more straightforwardly.

Levi also compares Peirce's approach to probabilistic logic with that of Ramsey, who was influenced by Peirce's *Collected Papers* in the 1930s. Levi claims that Peirce and Ramsey both, "claimed that there could be a logic of consistency for probabilistic as well as deductive inference", but differed in that "Peirce did not think that rational agents always ought to have numerically definite degrees of belief" (p. 46). This is a worthwhile paper, if a bit plodding.

The volume then turns from logic to metaphysics with Paul Forster's "The Logical Foundations of Peirce's Indeterminism", which discusses Peirce's view ("tychism") that the universe contains real chance. The denial of tychism Peirce called 'Necessitarianism', and the view was pervasive in the 19th century, often taken to follow uncontroversially from the

existence of causal laws and/or natural kinds. Peirce, however, devised an account of the way laws of nature causally determine events where that determination is of a statistical nature (of which “causal necessity” is a limiting or degenerate case). Forster traces the lineage of this statistical approach to law through the kinetic theory of gases and Darwinian biology.

We then return to technical logic. Peirce devised his own little-known systems of formal logic in graphical form, as he believed that all necessary reasoning involved experimentation on diagrams (with “diagram” here construed very broadly...), so a system as diagrammatically perspicuous as possible would enable the human mind to maximise its logical powers. In “A Tarski-Style Semantics for Peirce’s Beta-Graphs”, Robert Burch discusses Peirce’s second major graphical system, roughly equivalent to first-order predicate logic with identity, and proves its consistency.

In a quirky paper, (“The Tinctures and Implicit Quantification Over Worlds”), Jay Zeman explores Peirce’s anti-Cartesian understanding of thought as a process which literally includes the tools we build to assist us in the process. As noted, this led Peirce to develop the existential graphs for, “In doing mathematical reasoning we make of the diagrams ‘instruments of thought’, and advances in the technology of diagrams can directly affect our patterns of reasoning” (p. 96). Zeman then considers what a wonderful time Peirce would have had with access to “a modern personal computer” with its 256 colour scheme. He discusses Peirce’s tentative moves towards modal logic, which amounted to a proto-possible worlds semantics, but remained tantalisingly incomplete at his death. Peirce did, however, experiment with using different colours (or “tinctures”) on his graphs to signify “Modes of Being” such as possibility or actuality. Zeman explores such a logical system, with the help of his personal computer.

Sandra Rosenthal is next, with a paper entitled “Pragmatic Experimentalism and the Derivation of the Categories”. Categories are an interesting strand in the history of philosophy. If we set ourselves the task of sorting things into general types, and those types into even more general types, what terminates this process? Those types that are not themselves type-able are called categories, and identifying them was seen as one of the most important tasks of philosophy from Aristotle, through the medievals to Kant. Peirce boldly claimed to have gotten the list down to just three basic concepts - 1,2 and 3 (!). In her paper Rosenthal considers the question of how Peirce’s pragmatism can be reconciled with the blithe transcendentalism of this

categorical derivation. She argues that Peirce's argument for his categories was always phenomenological (rather than, say, empirical), though the phenomenology is of a particular "experimental" kind. I found this article bigger on "-isms" than examples, and would take issue with the extent to which Rosenthal identifies the categories as conceptions in metaphysics, rather than logic (that is, for Peirce, the methodology of inquiry).

Richard Robin also turns his attention to issues at the foundations of Peirce's architectonic in "Classical Pragmatism and Pragmatism's Proof". Yet another tantalising puzzle Peirce left scholars at his death was the "proof of pragmatism" which he claimed to have and kept promising to deliver soon. Much scholarly labour (not least by Robin himself, who catalogued Peirce's manuscripts at Harvard) has been expended searching through unpublished manuscripts for this proof. Robin argues that although the search apparently produced no finished proof of pragmatism, in fact the resources lie all around us in Peirce's philosophy to finish the task. The key idea which sustains the argument is that it is, "a coherentist defence, which in itself is a reflection of an underlying architectonic conception of philosophy" (p. 139).

Peirce, like Comte, framed a hierarchy of sciences according to which sciences draw leading principles from the sciences above them in the hierarchy, and observational data from the sciences below. The highest of all special sciences in Peirce's hierarchy was not logic, but (a choice apparently way out of left-field for contemporary philosophers) *aesthetics*. However as already noted, Peirce thought that logic is a species of ethics defined as how to act well: how to act well in order to further the truth. The science of how to *act* well, however, he thought was a species of the study of the good, "whatever is good in and of itself" (the "*summum bonum*"), and this was the subject matter of aesthetics, he claimed. Peirce made some intriguing remarks suggesting that the *summum bonum* is to be spelled out in terms of coherence. He claimed that for something, "to be aesthetically valuable, it must have a multitude of parts so related to one another as to impart a positive simple immediate quality to their totality." (p. 144). Such is the nature of a powerful idea projectible into countless different circumstances, and if Peirce wanted anything for pragmatism it was that. Robin suggests that in that sense, the "proof of pragmatism" is up to the users of pragmatism...This is thus a thoughtful paper which works on more than one level.

Helmut Pape has contributed “The Logical Structure of Idealism: C.S. Peirce’s Search for a Logic of Mental Processes”, a sharp and interesting paper which tackles the complex question of how exactly Peirce’s idealism is to be categorised. Is it a metaphysical, an epistemological or a “logico-semiotic” thesis? Pape argues that “one of Peirce’s contributions to modern philosophy is a unique fusion of all three kinds of idealism” (p. 153), which Pape labels “logical idealism”, for its central claim is (bearing in mind Peirce’s medieval definition of the real as general), “If there are real things their being corresponds to the process of reasoning” (p. 154). Pape shows how this *prima facie* metaphysically outrageous view makes sense given Peirce’s naturalistic generalisation of “reasoning” out of the human head into any evolutionary process, and discusses what it might mean for an object to determine a sign.

Though Peirce submitted to “the Rule of Reason” as the leading principle of his own life, he was far from advocating this for everyone, and advocated a sharp separation between the practice of science and decision-making with respect to “matters of vital importance”, which he believed should be left to sentiment and instinct. In “Sentiment and Self-Control”, Christopher Hookway gently probes the boundary of this separation, which shifted over Peirce’s lifetime, and inquires into whether Peirce can consistently hold both views on the “fixation of belief”.

Finally I will mention Susan Haack’s article “The First Rule of Reason”, which offers a bracing challenge to practices in contemporary academic philosophy, taking off from Peirce’s exhortation which he claimed “deserves to be written upon every wall of the city of philosophy: Do not block the way of inquiry.”(p. 241). Haack takes on with considerable courage the blocks erected in front of sincere reasoning in philosophy by scientism of a theological flavour, by inappropriate business models of “productivity”, and by political allegiances (such as feminism), with their attendant unquestionable premises.

There is much of interest in this philosophically variegated book.

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