PRAGMATIC IMAGINATION

Thomas M. Alexander

ABSTRACT

Pragmatism sought to clarify the topic of meaning by appealing to the concept of action. Action, however, turned out to be a complex and difficult subject, much in need of clarification itself. As it was developed by Peirce, James, and Dewey, action was seen to require an emphasis on the topics of imagination and creativity, which kept the pragmatic theory from the constricting, reductionistic behaviorism of psychology as well as from the limiting theories of meaning arising in the schools of positivism and language analysis.

After examining Peirce's abductory imagination, James' "sentiment of rationality," and Dewey's "qualitative thinking," I indicate in what respects a pragmatic theory of imagination needs developing. First, the concept of action must be kept as fully transactional and broad as possible. This requires an anti-reductionistic emergentism as far as human meaning and consciousness are concerned. Second, the epistemological concern with knowledge must be contextualized within a wider theory of noncognitive but meaningful human experience. Important advances have been made here by Mark Johnson's *The Body in the Mind.* Finally, pragmatism is most in need of developing an account of culture and history. Cultures are creative modes of symbolic action by virtue of which human beings seek to live lives of meaning and value.

KANT'S NEWTONIAN REVOLUTION IN PHILOSOPHY

Robert Hahn

ABSTRACT

The commonplace that Kant effects a "Copernican" Revolution--rather than a Newtonian or even Keplerian Revolution--misrepresents Kant's expressed view on the matter, distorts his view of Copernicus, and fosters a serious misunderstanding of the analogy by which he sought to make clear his contribution to metaphysics on the model of the "scientific revolution." Furthermore, it misleads us in our effort to understand what the revolution in science, the very model on which his metaphysics rests, meant to him.

I argue that Kant's first *Critique* is modeled on the hypothetico-deductive method outlined by Wolff in a book that Kant owned and from which he taught in 1759 and 1760. For Wolff and Kant, Copernicus is the proponent of a novel hypothesis, not the formulator of a rigorous deduction, which Kant credits to Newton. The scientific revolution, Kant's model for the *Critique*, was effected by Newton's deduction of universal gravitation, not the mere hypothesis of Copernicus.

HUME AND THE ONTOLOGICAL ARGUMENT

Arthur Johnson

ABSTRACT

With one possible exception, David Hume does not directly address the ontological argument for the existence of God. This in itself is somewhat strange. However, in some contexts he does develop certain positions that bear on the argument. These I consider under two main topics: his division of all knowledge into two sorts only, consisting of "relations of ideas" and "matters of fact"; and, his claim that we have no separate (or separable) idea of existence.

Hume has so defined the two sorts of knowledge that neither can provide any significant information of a Being that is both spiritual and transcendent. "Reason" is confined to "relations of ideas," and this kind of knowledge has to do only with mathematics (and possibly logic). All those matters having to do with actually existent things must be known through some sort of sense experience; and, God, if he exists, cannot be so experienced. Therefore, we ourselves, and not God, are the only possible source for any idea of God. By insisting that we have no idea of existence that is distinct from our idea of the existent object, he layed the groundwork for the kind of argument that Kant later formulated. But Hume failed to develop any direct attack on the ontological argument.

THE TWO CULTURES AND THE SECOND SCIENTIFIC REVOLUTION: A PHILOSOPHICAL REAPPRAISAL

Max Oelschlaeger

ABSTRACT

Philosophical indifference to the question of the two cultures is incomprehensible, given the import and significance of science within contemporary culture and the revolutionary epistemological/ontological implications of evolutionary science. Yet, twentieth-century mainstream philosophy has been content to slumber on, psychologically satisfied and sociologically entrenched within the position delineated by Moore, Stevenson, Russell, *et al.* Were classical science to remain cognitively supreme, then the mainstream philosophical tradition is perhaps defensible; but, the scientific revolution has continued, and classical science has given way to profoundly modern science. Here we can only briefly and elliptically attend to a few pivotal moments in the course of scientific events that give promise of revolutionizing philosophy.

Classical science suffered the first (scientific) challenge to its cognitive hegemony during the nineteenth century when thermodynamics and the notion of irreversible process emerged. Einstein's theory of special relativity further unraveled the Newtonian paradigm, demolishing space and time as absolutes. Furthermore, Einstein recognized that science itself can only arise and be sustained within a culture that values inquiry and the pursuit of truth. Werner Heisenberg's principle of indeterminacy, and quantum theory more generally, presented further obstacles to the maintenance of mechanistic materialism, for the inviolate and absolute sanctity of the atom was now beset with relativity paralleling that of Newtonian space and time. Gödel's proof also affected the ongoing scientific revolution, for with demonstration that no deductive system could prove its own cogency (since extrasystemic premises are required) even mathematics fell prey to a limited relativity. The fact that the laws of nature are capable of mathematical expression remains, as Heisenberg observes, a grand and inexplicable mystery: there is no demonstration, no logical proof that such laws are a necessary feature of the universe. Thus, as Prigogine argues, the unfolding of twentieth-century science compels recognition that time is not only real but irreversible; universe, solar system, and humankind are temporal (historical) phenomena, produced through a stream of influence that conditions but does not determine absolutely the future.

The seeds of Heraclitus are now blooming in the twentieth century, and novelty is again a category of the universe. We see now that reality is a process, that becoming underlies being. The twenty-first century awaits its Kant, and yet this premise seems to be the point of departure. Change, in its most fundamental sense, cannot be reduced to Parmenidean permanence, for time's arrow moves in one direction only. Furthermore, and most crucially for twentieth-century philosophy, humankind as epistemic and technologic agent is fundamentally entwined in that process of change. Elliptically stated, evolutionary potential is a palpable fact of life; ethical choice is informed choice (central to the classical foundations of Western culture); and, reflective thought underlies choice (thereby inextricably fusing the is and the ought). Scientific knowledge, although not a sufficient condition, is nonetheless a necessary condition of rational choice and bears directly upon not only knowledge of means but choice of values. Furthermore, while there is no valid deduction of an ought from an is, facts are cognitively relevant to tracking values in at least three ways: materially (i.e., in achieving desired ends), reflectively (i.e., in choosing values), and philosophically (i.e., in grounding values in an encompassing context).

PEIRCE, HILBERT, TURING, AND MATTHAY: AXIOMATIZATION IN MUSIC AND MATHEMATICS

Arthur Franklin Stewart

ABSTRACT

This paper enumerates and compares some important points between the foundations issue in mathematics, machine computability, what Charles Peirce described generally as the "mechanical philosophy," and what can be additionally described as the mechanical philosophy of classical music. It aims to illustrate how the attempted axiomatization of piano pedagogy by the highly influential teacher Tobias Matthay (1858-1945) can be seen as a structural model of the hoped-for axiomatization of mathematics by David Hilbert (1862-1943), and to show how this aspect of the mechanical philosophy of music may well harbor a problem similar to that of Hilbert's version of mathematical formalism.

A case is made that Matthay, like Hilbert, was convinced that all questions in his system could be answered by algorithmic means. This idea of such a definite or algorithmic method employing fixed rules explicitly required both Matthay and Hilbert to hold that each group or listing of such rules or steps be of finite length. Likewise, the exhaustive listing of all such groups of rules or steps should itself be finite and capable of being axiomatized. Thus, such completely axiomatized systems should provide for an investigator to account mechanically for each and every true statement in them. Turing's rebuttal of Hilbert's mathematical attempts is examined and applied as a structural model to the similar musical attempts of Matthay.

Turing used his idea of machine computability, described in his "On Computable Numbers" of 1937, as an interpretation of mechanical or algorithmic procedures. He employed this notion thus to prove false the claim that every true mathematical assertion in an exhaustively formalized system could be demonstrated by purely mechanical, algorithmic means. It is argued that Matthay's musical formalism is similarly flawed. These examples of what Peirce described as "conditions . . . artificially produced" are contrasted with his notion of an alternative form of decidability, one governed by the experimental method of pragmatism.

ARISTOTLE ON SUBSTANCE AND UNIVERSALS

Larry Taylor

ABSTRACT

This study does not attempt to solve problems as much as to clarify them. To this end, five things are accomplished: 1) Aristotle's notion of substance in the Categories is clarified; 2) the distinction between primary and secondary substances is made apparent; 3) Aristotle's change of emphasis concerning primary substance is seen in the transition from the Categories to the Metaphysics; 4) the distinction between substance and universals is now clearer; and 5) some sense of the unsolved nature of the problem is presented.

HUME AND THE HISTORIOGRAPHY OF SCIENCE: A CHARACTER SKETCH

S. K. Wertz

ABSTRACT

In this essay I examine David Hume's historiographical category of Character (whenever I refer to this idea with the word, it shall be capitalized) and its application to important figures in the history of science who appear in his *History of England*. From the over forty Characters in the *History*, we find ones of Francis Bacon, formation of the Royal Society, the French Academy of Science, Robert Boyle, William Harvey, and Isaac Newton. I have selected two individual Characters--Harvey and Boyle--to illustrate Hume's historiography of science, that is, how he dealt with scientists historically. Hume intended his Characters to be adopted by future historians. Conjoined to these brief intellectual biographies and narrative descriptions of the European scientific groups are numerous other historical references to science which nicely illustrate Hume "adorning the facts." Consequently when these episodes are viewed together we may legitimately claim that Hume was one of the first historians of science, and specifically that he had an interest in accounting for the growth or development of science in Great Britain. The remainder of the paper attempts to locate Hume in the historiography of science.

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