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BOOK REVIEWS

Against Mechanism: Protecting Economics From Science

by Philip Mirowski
Rowman & Littlefield, 1988

Reviewed by Peter G. Klein

Of the new generation of economic methodologists--Bruce Caldwell, Lawrence Boland, perhaps Arjo Klamer--the most talented and outspoken may be Philip Mirowski of Tufts University. Modern methodological discussions tend to fall into one of two categories: "meta-methodology" (What should we do about all these competing research programs?) and "rational reconstruction" (What did Friedman really mean in 1953?). Mirowski, by contrast, prefers a frontal assault on the hard core of neoclassical economic theory itself: the entire constrained optimization paradigm. This technique, he claims, was imported directly from mid-nineteenth-century physics by Jevons, Walras, and their successors, with little thought to its applicability; and most of us have been using it uncritically ever since.

Mirowski has been elaborating this position over the last few years in scattered journal articles and two books (neither of which has received very much attention).¹ A definitive statement of his thesis has been in preparation for some time, but the book, More Heat Than Light (Cambridge), has as of this writing yet to appear. Because of the delay the work under review, a collection of twelve of Mirowski's essays, most of them previously published, was released in 1988 by Rowman & Littlefield in New Jersey.

The core of the volume, and easily the best essay, is the first chapter, "Physics and the 'Marginalist Revolution,'" an article that originally appeared in the Cambridge Journal of Economics in 1984. Here Mirowski offers the bold claims that (1) the distinguishing characteristic of the new marginalist economics of the 1870s and 1880s (at Manchester and Lausanne, at least) was not marginal utility at all, but the fact that the new theory was patterned explicitly after physics--in particular, the new physics of energy and the field--in a conscious and deliberate attempt to make economics more "scientific"; and that (2) this same nineteenth-century energetics model has persisted as the basis of modern economics, even long after its abandonment in the physical sciences. This thesis, Mirowski says (pp. 24-25),

explains a number of issues which have eluded other attempts at locating the hard

¹ The books are The Birth of the Business Cycle (New York: Garland Publishing, 1985), and The Reconstruction of Economic Theory (Boston: Kluwer, 1986), a collection of essays by several authors edited by Mirowski.

core of neoclassical theory. . .First, it explains why neoclassical theory and mathematical formalism have been indissolubly wedded since the 1870s, even though a cogent defense of the necessity of the link has been notable by its absence. Second, it explains the success of neoclassicism in preempting other research programs in economics by means of the forceful claim that it is scientific, even though standards of scientific discourse in the larger culture have changed periodically during the last hundred years. Third, it explains the preference for techniques of constrained maximization over any other analytical techniques. . .

Fourth, it explains the persistent use of an unobservable and unmeasurable value determinant--utility--in textbooks and in applied research, despite protestations that utility is not "needed" for neoclassical results. . .Fifth, it explains the modern controversy over the necessity for a "microfoundation for macroeconomics," which can be interpreted as a complaint that Keynesian economics has not conformed to the hard core research strategy and is therefore somehow illegitimate. . .All these characteristics are borrowed from nineteenth century energetics.

These general concerns should be familiar to modern Austrians (whom, by the way, are not cited anywhere in the book), but Mirowski goes much farther in emphasizing the details of the energetics metaphor and the special difficulties in its application to economics. One problem is that any constrained maximization problem assumes some sort of conservation principle. In energetics, it is the total energy of a moving object (the sum of potential energy and work accomplished) that is conserved. Walras's system, it turns out, implicitly assumes that in the process of exchange the sum of total expenditure and total utility is somehow conserved, a proposition that clearly isn't sensible. Yet neoclassical theorists have continued to "surreptitiously" assume some form of conservation principle in their work (p. 19). A second problem is that the early energetics models assumed all physical processes to be fully reversible in time; that is, they should exhibit no hysteresis or time dependency. In economics this means that "in equilibrium bygones are bygones; thus one could practically ignore how a market actually functions in real time, paying attention only to putative 'eventual' outcomes" (p. 26).²

Such assumptions are rarely questioned (or even noticed), according to Mirowski, because the early neoclassicals themselves didn't fully understand the implications of the energetics metaphor, and few economists then or since have known enough physics to question it. (In chapter two Mirowski presents correspondence between the mathematician Hermann Laurent and Walras, and later Pareto, in which Laurent outlines at length the mathematical inconsistencies of the new economics; Walras's and Pareto's responses indicate that clearly neither was exactly sure what he was doing.) This should come as little surprise when one recalls the number of noted economists who

² The reviewer has found the reversibility problem acknowledged in only one other place, W. W. Bartley's Unfathomed Knowledge, Unmeasured Wealth (La Salle: Open Court, forthcoming), pp. 132ff.

began as dissatisfied physical scientists.³ The author also makes it quite clear that Menger, by these criteria, is not a "neoclassical" economist at all, having rejected both the law of one price and the view that traded goods are equivalent in value (pp. 22-25). The analysis here is consistent with the recent work of Erich Streissler and William Jaffé on "de-homogenizing" the Jevons-Walras-Menger triumvirate.⁴

The other essays in the book develop these basic themes, although the quality of the selections is somewhat uneven. Especially noteworthy are chapter six, a further exploration of the role of conservation principles in economics; the review of McCloskey's Rhetoric; and the first few pages of chapter ten on Morishima's Marx's Economics. Less satisfactory, however, are the chapters on Mirowski's own version of "neo-institutionalist" economics, which he sees as the preferred alternative to the neoclassical orthodoxy (although nowhere in the volume is a research program explicitly stated). Apparently Mirowski does not mean, by the way, the so-called "New Institutional Economics," which comprises the formal contracting and agency literature and Oliver Williamson's transaction cost economics; none of these are mentioned in the text, even though this is clearly a "hot topic" in microeconomics. In addition, there is no comment on any modern Austrian school writers, Misesian, hermeneutician or otherwise, despite the fact that the Austrians have been loudly "against mechanism" for a long time.

A few other minor quibbles: Mirowski's self-conscious attempt to cultivate a flashy and clever writing style is mostly forced and uninspiring; while it is certainly true that "it behooves economists who repudiate the slavish imitation of physics to rediscover their literary and philosophical roots" (pp. 7-8), it doesn't follow that one cannot be simple, clear, and direct. (Fortunately Mirowski doesn't come close to the difficult and confusing style of Georgescu-Roegen's The Entropy Law and the Economic Process,⁵ a work cited favorably in the text.) Furthermore, the book's examples and illustrations from physics are not particularly elegant or clear, which is unfortunate because conveying a basic understanding of energetics to the non-specialist is so central to Mirowski's purpose. Also several of the chapters are burdened with an extremely annoying combination of endnote and parenthetical references that sends the reader flipping back and forth among the text, the notes at the ends of chapters, and the references at the end of the book.

In sum, though, Against Mechanism is an important work that deserves to be widely read, especially for its penetrating and original analysis of the meaning of the "marginal revolution" and the problems of scientism in modern neoclassical economics. Until the appearance of More Heat

³ Compare, for example, Alan Blinder's personal story in Arjo Klamer's Conversations with Economists (Totowa, N.J.: Rowman and Allenheld, 1983).

⁴ Erich Streissler, "To What Extent Was the Austrian School Marginalist?," History of Political Economy 4 (Fall 1972): 426-41; William Jaffé, "Menger, Jevons and Walras De-homogenized," Economic Inquiry 14 (December 1976): 511-24.

⁵ Cambridge, Mass.: Harvard University Press, 1971.

Than Light, however, we shall have to reserve judgement on Mirowski's own neo-institutionalist agenda.