

A Revisionist's View of the History of Economic Thought

Interview with Philip Mirowski

This economic historian seeks to place the development of economic theory in its intellectual and cultural context. He sees economic theory as a subset of moral philosophy. As such, far from being a set of universal principles, economic theory evolves as our view of nature evolves.

Q In one of your recent books, you write, "I find it hard to understand economics as anything other than a subset of moral philosophy." What do you mean by that?

A. I mean that to a large degree, orthodox economics has been developed to mimic our dominant theories of nature. And a lot of thinking concerning morality has to do with what some think is the relationship between nature and society or, similarly, the individual and the collective. For example, is morality based on a natural law, independent of time and place? Is morality rooted in human nature? The notion that economics has at some juncture ascended to the status of a neutral natural science, just telling it like it is, and has man-

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aged to transcend its inherent moralizing tendencies that date from earliest classical political economy, seems to me about as plausible as the notion that canned statistical packages loaded on personal computers make their users objective and impartial empiricists.

Q Where does orthodox economics fit in that?

A. Just after World War II, many American economists took the position that neoclassical economics fostered a separation of facts, or theories, from values, so that a body of neutral doctrine existed independent of the moral or ethical inclinations of the individual economist. I have written recently about how Milton Friedman's methodology essays promoted this idea, which made a mockery of the actual historical sequence of events whereby the Chicago School became established. But his political opponents, such as Paul Samuelson, also partook of this credo, and a version of it spread it to subsequent generations through their textbooks. They were all essentially united in maintaining a version of moral philosophy that had no grounding in their actual practices, as philosophers such as Hilary Putnam, Alistair MacIntyre, and Charles Taylor now admit.

One potential explanation for the acceptance of this notion is that these folks subscribed to the ideal of an abstract, amoral, neutral science like physics. If you believe that, then there must be an abstract, amoral, generic truth in economics that mimics those found in amoral nature. In my view, this notion has turned out to have been an important underlying motivation in the development of Western economics. Just as water seeks its own level, commodities supposedly seek out their most "efficient" uses. In order to spell out the implications, I have spent much of my time trying to excavate the foundations of that type of economic thinking, engaging in an archeology of knowledge, so to speak. Early neoclassical economics, based on constrained optimization and marginalism, was patterned upon nineteenth-century mechanics. This was the primary topic of my book, *More Heat Than Light* (Cambridge University Press, 1989). (For those who need a quick definition of neoclassical economics, it is roughly

what is taught in modern intermediate microeconomics: the maximization of utility, the definition of equilibrium as the equivalence of marginal utilities, the conception of trade as shifting commodity bundles between holders, and the notion that the market by its nature makes everyone better off.) But now that physics perspective has become so encapsulated in neoclassical economics that we do not really pay much attention to it anymore.

Q How did you develop an interest in excavating, as you put it, the sources of economic theory?

A. Partly it came about because, as an economics grad student at the University of Michigan, I was also attracted to the history and philosophy of science. But I never had any thought of bringing the two together. Then, it dawned on me while reading some of the early neoclassical economists—in particular, Leon Walras, William Stanley Jevons, and Vilfredo Pareto—that they would regularly make reference to mechanics in their economic writings. Because I'd been studying the history of science, I knew that in the middle of the nineteenth century there was a popular intellectual movement known as energetics; it was another one of those enthusiasms that periodically sweep through physics. Physicists periodically want to believe they have finally found the comprehensive Theory of Everything. By the end of the century, there was a substantial cadre who thought formal theories of energy would explain everything, including human psychology, human interaction, the economy, and so forth.

Q. Were these economists consciously adapting physics to explain the economy?

A. Yes. They even said so. In some cases, they went so far as to supply a special table of correspondence, which displayed the translation, term by term, from mechanics to their version of economics. That is one thing that has struck me after I published the book. I report what these early neoclassical economists said about physics as their template and inspiration and describe its implications, and then modern economists find it so offensive—this idea that their models

were copied from physics—that they simply deny it. “That’s not the economics that I know and love,” they more or less insist. “That wasn’t *my* professor’s economics.”

Now, the late nineteenth-century economists frequently got some of the physics wrong, or conveniently overlooked the uncongenial parts of the translation, but that is not what my readers mean. I have heard it said more than once that the history of economic thought is useless, since who cares about a litany of errors and dead ends? But when I suggest that history can illuminate the stuff they believe is true, and not just the rejected knowledge, that is when I find that the blinders clamp down and the mental doors clang shut. Economists are now typically trained to believe that history is irrelevant to their doctrines, because they are encouraged to approach it like revealed truth. I would suggest that is in essence a moral stance, though obviously one I reject.

Q I guess I am intrigued mostly by what is apparently passed on in most economics courses, that economic theory is uninfluenced by cultural or political factors, or ways of thinking that, as you say, derive from natural sciences. Of course, it is easier to teach it that way, and easier to win over students.

A. That is right. There is a contemporary version of the history of economic thought that maintains that it was mostly all in Adam Smith, and that all that modern neoclassical economics does is add rigor, plus a few bells and whistles, due to our immensely improved understanding of the mathematics involved. This is the story—which has nothing to do with what a historian would deem history—where everything legitimate is preserved intact within the economics discipline, and truth is always cumulative. But knowledge is not like money. If you do not use it, you lose it; but when you use it, you change it irreversibly.

I think there has been a desire, especially but not exclusively American, to propound a theory of the economy that is not tied to any culture area or historical contingency. The phenomenon of global-

ization only magnifies it. This turns out to be very different than, say, institutional economics or German Historicism, which were dependent on the cultural inheritance and other idiosyncrasies of time and place. It is also very different from a doctrinal orientation that suggests there is no such thing as "The Market," but only many diverse "markets" that produce divergent results and interact in complex ways. Against these traditions, in the twentieth century there was a desire for economics to mimic pure logic. Once that logic was explained, or so it was thought, there would not be any question of discussing whether it was right or wrong, because its truth would be instantly transparent. That has been one of the sources of the strength, even still, of neoclassical theory, namely, that it presents itself as a sort of a hermetically self-contained and bulletproof view of the world. But the slightest familiarity with intellectual history makes clear that that view is a house of cards. In the interest of fostering self-confidence, students must be sheltered from doubt. And so most economics departments, far from requiring study of history of economic thought, do not even offer it anymore. This development exactly correlates with the rise to dominance of neoclassical theory.

Q So let us jump forward to the Great Depression and World War II. We generally assume that the Keynesian revolution interrupted a long tradition of neoclassical economics. Today's mainstream stitched together neoclassical economics with Keynesian economics and in some circles has returned to an even more pure neoclassical economics. But you have found that there was no neoclassical consensus before the Depression.

A. That is right. In fact, there was no overarching dominant orthodoxy back then. It was a very fluid and diverse situation in prewar academia. If we accept that premise, then we have to wonder how it happened that the current neoclassical orthodoxy managed to triumph after World War II. With my coauthor, Wade Hands, I have made an argument that American neoclassical economics was not a single monolithic creed that hatched out of World War II ("A Paradox

of Budgets,” in *From Interwar Pluralism to Postwar Neoclassicism*, ed. Mary Morgan and Malcolm Rutherford [Durham: Duke University Press, 1998]). Rather, it consisted of three very different schools of thought, each linked in different ways to the development of operations research and thus supported by the postwar military establishment. The three doctrines were cultivated respectively at the Cowles Foundation at the University of Chicago, the University of Chicago economics department, and the Massachusetts Institute of Technology. Cowles and MIT were more left wing, while Chicago was more right wing. But the differences extended far beyond politics. It would tend to get technical if I were to specify all the dimensions along which these groups differed, but suffice it to say, they would include attitudes toward macro- and microeconomics, empirical practices, philosophical convictions, and much else. But the argument I made in *Machine Dreams* (Cambridge University Press, 2002) was that all the major people who were involved in the rise of neoclassicism in the postwar United States had either studied under or corresponded with two central figures during the 1930s: Harold Hotelling at Columbia and Henry Schultz at the University of Chicago. They seemed to be the obligatory passage point for the construction of postwar orthodoxy.

Q. What was their influence?

A. Hotelling and Schultz were trying to develop what they hoped would be a more empirical and scientific price theory. They believed that Marshallian supply and demand was sloppy, and that a true science would yield refutable quantitative predictions and sharp policy prescriptions. But they failed. They could not get their ideas, inspired by Walras and Pareto, to work empirically to their satisfaction. Schultz died in 1938, and Hotelling went to work for the government in the field of operations research during the war. There Hotelling was instrumental in bringing lots of trained economists into operations research (OR), including some of the major figures of postwar economics.

Being operation researchers gave them a new feel for how natural scientists behaved when tackling social problems—like how to develop strategy and tactics in war—and bequeathed them a novel set of

mathematical tools. For instance: How many fighter plane sorties would you need to guarantee a significant level of destruction? What is the best way to attack a submarine from the air? How would radar change dogfights? What does one casualty "cost"? Significantly, it turned out that one could apply these new techniques to the economy as well. So, my argument is roughly that the experience of these progenitors of postwar neoclassical economics with the military and operations research united them, even though their positions with regard to the economy and politics rapidly separated them into three distinct schools. Operations research served as a *lingua franca*. Through it, they understood each other's statistical techniques and optimization algorithms, even if they did not agree on fine points of economics. The victory in war imbued them with confidence in the efficacy of their tools. And, not insignificantly, through OR they were tied to postwar government funding. That was one very important reason why neoclassicism came to drive out or otherwise dominate rival schools of economics in the postwar period.

Q. So you find that the three schools that made up postwar neoclassical economics were funded by government projects, government grants?

A. No, more correctly, by military money. You have to realize that military money was largely the initial common denominator: the Office of Scientific Research and Development, the Office of Strategic Services, the Office of Naval Research, the Atomic Energy Commission, the MIT Radiation Lab, the Applied Mathematics Panel, and so forth. But as the three schools proceeded to separate out from one another, they began to attach themselves to different patrons. For example, among the main patrons of the Cowles school were the Rand Corporation and hence, indirectly, the Air Force. One of the main patrons of the Chicago school was the Volker Foundation, a group of businessmen who wanted a refutation of socialist tendencies they thought had infected economics.

So, the argument I make is that the three neoclassical groups, however eventually different in political outlook and economic policy prescriptions, were held together in part by the preoccupations of

their patrons, but in part by their previous experience with certain techniques of analysis when it came to scientific research. This includes, by the way, the heavy reliance upon statistical inference, which is one of the earmarks of operations research. Their rivals failed because they lacked patrons of commensurate largesse and, of course, the OR experience.

Q Could you provide a definition of each of these schools?

A. The Cowles school emphasized the *Walrasian* general equilibrium, where all markets can be simultaneously in equilibrium with each other. In fact, what they sought was a theory of maximum generality, applicable under any set of institutional or political circumstances. This was a favorite theme they inherited from Hotelling. That is why they advocated a theory of “market socialism,” which used Walrasian models to supposedly explain how a socialist economy might work. So the Cowles school generates the famous model of Kenneth Arrow and Gerard Debreu, which proved under strict assumptions the existence of general equilibrium, where no one could be made better off unless someone else was made worse off. It also pioneered fairly complicated econometric practices, which purportedly take these complex interactions into account. Their political orientation was highly nuanced: they were mostly anti-Marxist and anti-Institutionalist, and the Cowles group was not all that attracted to Keynes. Not just any old socialism/liberalism met with their approval.

Q. What about the Chicago school?

A. The Chicago school is probably the one that laypeople are most familiar with, given the popular books and TV shows by Milton Friedman, a student of both Schultz and Hotelling. The Chicago school takes a different attitude from Cowles’s. It says that partial equilibrium price theory is just fine for most purposes. You can just concentrate on one market and not worry how all markets interact. Simple supply-and-demand stories will usually get you to the correct answer, so elaborate mathematical models are unnecessary. Statistics are also rough and ready, without too much fancy econometrics. In their mod-

els, the market inevitably produces superior results compared to any other system of organization, and government attempts at intervention almost always fail, or else create unintended consequences that mess up the operation of the market. Chicago believed monopoly did not matter, and that most apparent “market failures” were mirages.

Q. Is the MIT school also politically liberal like the Cowles school?

A. The politics lives in the nuances. MIT was different because it promoted Keynesian macroeconomics as being really central to the postwar economics, whereas these other two schools did not. That is an important point. In terms of price theory, the MIT school tried to situate itself somewhere between the extremes of Cowles and Chicago. So, for example, they do not do full-fledged general equilibrium models, but on the other hand they disparage Marshallian supply and demand. Their models are “matchbook”-sized—two goods, two periods, two countries, etc.—where the point seems to be an illustration of one or two salient points. They tend to find market failures lurking everywhere. There are always new stories in which the market does not lead to the overall optimum, and therefore government intervention is sometimes required.

Q. Precisely to correct market failures?

A. Exactly, correcting market failures. For example, consider the idea of a public good, which became central to postwar discussions of the role of the government. The public good is really an MIT idea. Chicago hated it.

Q Now, these three schools arose in the post-World War II period, but the MIT School dominated in the first decades. In your view, why was that?

A. I would suggest that the MIT school became the public face of neoclassical economics early on, thanks to Paul Samuelson’s introductory textbook, *The Principles of Economics*. (Samuelson was a student of Schultz.) That was the first really successful neoclassical textbook in the United States. As a result, in the 1950s and 1960s, neoclassicism comes to be associated in the public mind with the

Samuelsonian view of the world. Yet there were early warning signs: How could Samuelson's version of economics be the sum total of neoclassicism, when he was fighting with Friedman so much? They both had opposing columns in *Newsweek*, defenders in different universities, and so on. In the United States, Keynes was largely thought to be antagonistic to the neoclassicals. But Samuelson tried to bring Keynes back into the neoclassical tradition. Most people thought it was just politics, but it was a symptom of the extent of dissension within the American neoclassical orthodoxy.

Outsiders were much less aware of the intellectual clash with the third pole, the Cowles school. There was a muted criticism from Cowles, I think, that the kind of economics that MIT did was a little bit too quick and dirty.

Q Why did the Chicago school gain ascension in the 1970s? Was it because of inflation?

A. The feeling that Keynesianism was somehow damaged or impugned by the stagflation of that period certainly helped the Chicago school prevail, but I think that is too simple an account. I also think this is where the question of neoliberalism comes in. From the beginning, the Chicago school had a much more capacious view of how economics would relate to politics than either Cowles or MIT did. They understood that they would have to come equipped with theories of politics that were more serious than the Keynesians had. What is one of the standard complaints against Keynesianism? That it looked at the government as if it were totally benevolent and it would engage in fiscal and monetary policy for the good of all, with no thought as to its own persistence and viability. The neoliberals would retort, "No, no you can't trust them, the government is as self-interested as any of our other actors."

Q. Can you explain that further?

A. Two out of the three schools realized by the 1950s that they would have to subject the government to the same sort of scrutiny they lavished on other economic actors to round out the neoclassical

project. (It is significant that the MIT school, the Keynesian advocates, were latecomers to this development.) Cowles initiated the field of "social choice theory," which seemed initially to seek out ways that participation in government was compatible with rational choice theory. Chicago and its offshoots instead founded something called "public choice theory," which tended to erase any substantive distinction between economic activity and political activity, be it voting, joining political parties, or trying to convince others of your position. Voting in that idiom is a kind of consumer sovereignty issue in the same way that market purchases would be a consumer sovereignty issue.

Q Could you explain precisely how neoliberalism in its modern connotation differs from neoclassicism?

A. Neoclassical economics is the physics-based explanation of the economy we discussed earlier. By itself, it says nothing necessary about the government, or politics in general. Neoliberalism was a movement to revive pro-market conservatism in the mid-twentieth century when it was at its lowest ebb, in the period just after the Great Depression. It was superimposed on neoclassical economics. It is crucial to understand that neoliberalism does not necessarily oppose the existence of government. Neoliberalism frequently seeks to use a strong government to foster the spread of "free market" relations everywhere. So what that involves, among other things in economics, is portraying other kinds of social relations as though they were virtual market relations. That is where public choice theory and social choice theory enter the picture. Neoliberalism also propounds that almost all other institutions, including corporations, are virtual markets, in the final analysis. This helps neoliberals assert that corporations can do no wrong.

Q. But doesn't neoliberalism generally argue for minimizing government?

A. That is more characteristic of the older conservatism. The new liberals, what Europeans call neoliberals today, are quite willing to

disparage the government in public, but the litmus test is how they treat concentrations of power in practice. The classical libertarian sees any concentration of power as a problem for individual freedom, even in markets. A neoliberal claims that power in the marketplace is generally irrelevant, since if it exists, it is merely the result of consumer choice. So let me give you an example. A classical libertarian would be in favor of antitrust, since market power can obstruct freedom just as drastically as a totalitarian state. A modern neoliberal would say all monopolies tend to be undone by competition anyway, so don't worry, be happy. They might phrase this as the proscription that the state should not interfere, but what they really mean is that the state should use its power in what I would argue is a biased fashion.

Q. Friedman himself sounded like that.

A. One traces Friedman's career from a reasonably classical liberal position in many respects to a strong neoliberal position in his *Capitalism and Freedom* as he changed his views on any number of these specific political positions. His transformation coincided with the development of neoliberal doctrines at Chicago from the late 1940s onward, as some historical work done by me and Rob Van Horn has shown.

Q. The Chicago school then prevailed, for a while anyway, in the 1970s, you say partly because it was linked to politics in a more explicit way.

A. It had a much more integrated view of politics than their counterparts at Cowles and MIT.

Q. It had a theory of government failure that had to be contained and offset.

A. Exactly, that government failure is somehow the other side of the doctrine of market failure, which had been pushed hard by the MIT school. It had a much larger view of an overarching political economy than the other schools. Perhaps this could be traced to the fact that the origins of the Chicago school were not confined to the economics discipline but also were found in the law school, the busi-

ness school, and even the Committee on Social Thought. It gave them a certain advantage, but then, as I admit, events helped them a lot, too, like the oil crisis and the subsequent inflation.

Q Since 1980, however, what's been going on?

A. The three-school story of American neoclassicism starts to break down by 1980; you can see that in a couple of ways. One way it happens is that the schools are exchanging their students as faculty members, and so the lines become progressively blurred. You do not get that kind of sharp divergence in terms of both research practice and techniques that you had around 1955. Another is the increased homogeneity of the economics journals. A number of other things happened, which I enumerate in *Machine Dreams*. But the net result is that the orthodoxy in microeconomics shifted away from this earlier neoclassical concentration on price theory to game theory. Game theory was invented in the 1940s, but it really did not ascend to the orthodoxy in economics until the late 1970s or the early 1980s. The reasons for this shift are controversial, and with only a few exceptions (like Abu Rizvi and Nicola Giocoli), historians have declined to address them at length. Part of the story resides in the legacy of operations research, the discipline where game theory found refuge in its era of rejection by economists.

I might also suggest that one place to look is the history of the natural sciences. One possible reason that economists have abandoned the three-school configuration is that the culture in general stopped thinking of nature as a simple mechanical process anymore. More and more, we tend to think of nature as an information-processing device, inspired in part by our experience with computers. Because the image of nature has changed so dramatically in the natural sciences, it eventually had to happen in economics too. Game theory treats the agent as an inferential machine (with opponents trying to "outguess" each other), so it better resonates with contemporary concerns. It also shows up in the rise of an information economics, and so on.

Q Isn't there is a politically conservative tone to this as well?

A. Not so much in John von Neumann's 1944 version of game theory, but, yes, in John Nash. Nash proposed the Nash equilibrium in 1950. The Nash equilibrium is now the dominant orthodox solution concept in microeconomics. In it, economic agents are always trying to outdo each other through deception, through emission of ambiguous signals, some true and some false. The role of the market is now portrayed as the transmission of these signals.

Q. Is there a way to define Nash equilibrium simply?

A. It is a personal best strategic reply to an opponent (which involves a maximization problem) who is equally trying to discern your best option and play his best response. The equilibrium comes where both opponents settle upon the same move in the game. Economists assert it is an expression of self-interested rationality, but that is debatable. A better short definition would be: We are all little Hobbesian agents, and we are all trying to do each other in, and in equilibrium we agree on how we will all go about doing it.

Q. So there were neoliberal inclinations in this theory?

A. The Nash equilibrium is the extension of neoclassical market theory to the very process of interpersonal thought itself. There is very much of a cold war flavor to the Nash equilibrium, and I am not the first person to notice this. Lots of people have commented on it. The implicit background image that there were two superpowers pitched on the hair trigger of world destruction is a good summary of the mindset of Nash equilibrium. Nash game theory was used in developing theories of nuclear strategy before it became popular in economics.

Q And you reviewed Sylvia Nasar's book about John Nash, *A Beautiful Mind*, quite unfavorably.

A. I have argued it is not historically accurate in a number of ways, but worse, it never explained what the Nash equilibrium was to the general reader, or why it was unable to gain acceptance among the

cognoscenti in the 1950s. At first, even many game theorists rejected it. Only later did economists come to treat it as the philosopher's stone. Nasar instead makes it seem as though everyone immediately fell prostrate before its untrammelled brilliance. The book and the movie made from it were more concerned with the melodrama of the man John Nash receiving the Nobel Prize than the shape and substance of his achievement.

Q. And why do you think it became accepted?

A. That is where it connects to the persistent rise of neoliberalism. First it portrays each of us as though we were some kind of algorithmic computers trying our damndest to outwit each other. The world is a cruel place, and temporary alliances of convenience with the powerful are the royal road to success. With Nash game theory, the market need not produce the standard neoclassical optimality properties—there are prisoner's dilemma outcomes, no trade theorems, information paradoxes, and a host of other disturbing results. However, this is treated as a state of nature—there is no alternative, and the government is impotent to rectify such “failures.” This vision of everyone as driven to falling back on their own wits, cynically manipulating others, lacking even a trace of communal intelligence or transpersonal commitment, seems very much the image of the agent in neoliberalism too. In a phrase, everyone is reduced to the status of an entrepreneur of the self. I am not saying that John Nash had this in mind, or anything else like that. But nevertheless Nash game theory and neoliberalism certainly do resonate together as a unified framework of explaining the world, economic or otherwise, and the role of human beings in it. To bring it really full circle, you might begin to discern that there is a moral philosophy lurking here too. Economists never really can escape it.

Q. So neoliberalism prevails?

A. It seems so. It becomes so natural that people don't even realize that they frame problems in these terms. I know lots of economists who think of themselves as opposed to the Chicago School, or what it used to stand for. Yet I do not think they realize the extent to which their presumptions about what a human being is, what thought is,

and what the market consists of have been defined by the neoliberal tradition over the past fifty years.

Q The upshot of your analysis is that economic thought is subject to ideology, to prevailing trends in natural sciences, to cultural issues.

A. Very much so.

Q. To political necessities?

A. Within the current configuration of patronage and scientific development, subject to the discipline of prior orthodoxies. That is right. Contrary to the conventional wisdom, economics cannot be cumulative, because if it displays too much inertia, it shrivels up and dies.

Q. But do you see economics as changing again?

A. I think eventually there will emerge a different style of economic theory that will grow out of contemporary alterations in the way in which the science is paid for, the changing place of economics in the university and the corporation, and current developments in the natural sciences. For instance, I think it is safe to say that physics is no longer the top-dog science it was after World War II, but that biology is increasingly perceived as the science that holds out the greatest promise of the future breakthroughs. Concurrently, more and more university research is becoming privatized, paid for on a contract basis by outside corporations. Finally, large players are continuously changing the rules that govern world markets, so it becomes less plausible to believe that all markets operate alike. All of this bodes ill for the future of good old-fashioned neoclassical economics. It is small wonder, then, that the avant-garde are positioning themselves to define the “evolutionary economics” for tomorrow.

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