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# The Arrogance of Economic Theorists

Donald N. McCloskey

Economists are certainly arrogant enough for the role of modern medicine men. Other experts seem timid by comparison. For a moderate fee, an economist will tell you with all the confidence of a witch doctor that interest rates will rise 56 basis points next month, or that dropping agricultural subsidies will increase the Swiss national income by 14.8%.

Observing such confidence, most people attribute it to ideology. They suppose that the economists are merely writing down their politics in numerical form. Yet even economists with little in the way of political preconceptions are wildly self-confident about their beliefs. A physicist named Richard Palmer attended a conference with economists, and told a reporter afterwards: "I used to think physicists were the most arrogant people in the world. The economists were, if anything, more arrogant."

What makes economists more arrogant than physicists is that they are more mathematical. More mathematical than physicists? How can that be? Surely the physicists, the princes of knowledge since phi-

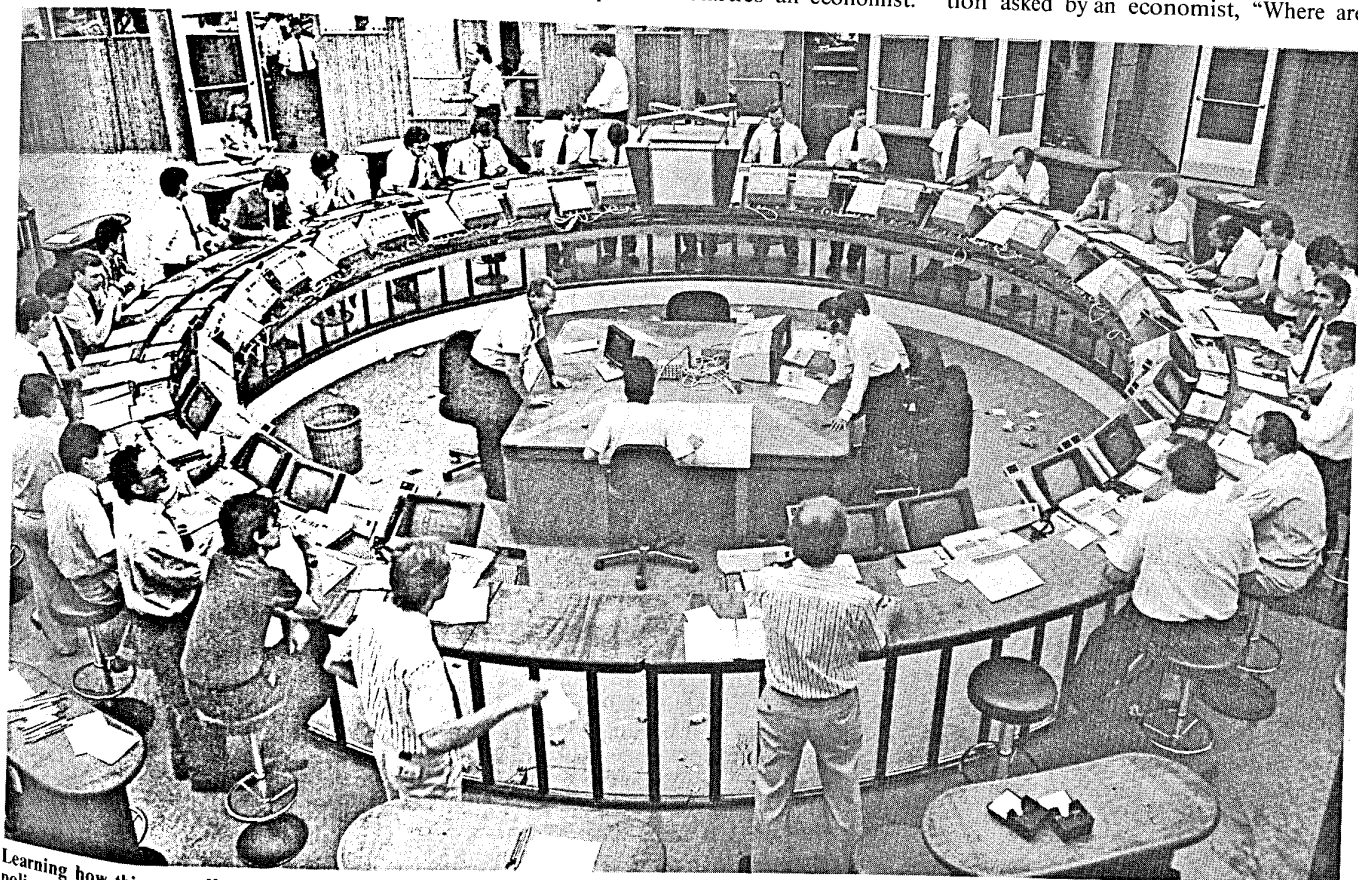
logists abdicated the throne, know more mathematics than the economists. Yes, of course they *know* more. Walk the aisles of any university bookstore and open some of the advanced undergraduate books in physics (or in the much-maligned field of civil engineering, for that matter). It makes the hair stand on end: Bessel functions abound; group theory is routine.

The proposition, however, is not that economists *use* more mathematics; it is that they are "more mathematical." In university economics departments, the spirit of the Mathematics Department reigns. The spirit is different over in the Physics Department. The late Richard Feynman, a Nobel laureate in physics, introduced a few simple theorems in matrix algebra into his first-year class at the California Institute of Technology with considerable embarrassment: "What is mathematics doing in a physics lecture?" he asked, adding: "Mathematicians are mainly interested in how various mathematical facts are demonstrated. They are not so interested in the result of what they prove." Feynman's rhetorical question startles an economist.

In advanced economics the question would be rather: "What *besides* mathematics should be in an economics lecture?" In physics the familiar spirit is Archimedes the experimenter. But in economics, as in mathematics itself, it is theorem-proving Euclid who paces the halls.

Economists think of themselves as the physicists of the social sciences. But they know nothing about how physics operates as a field, and the physicists themselves are astonished at the mathematical character of economics. The Santa Fe Institute in New Mexico, which brings the two groups together for the betterment of economics, has made the cultural differences plain. In 1989 the American magazine *Science* described the physical scientists there as "flabbergasted to discover how mathematically rigorous theoretical economists are. Physics is generally considered to be the most mathematical of all the sciences, but modern economics has it beat."

It is important to note that the physicists do not regard mathematical rigor as something to be admired. To the seminar question asked by an economist, "Where are



Learning how things really work: Graduate schools in economics have been producing macroeconomists who have not read a page of Keynes, and policymakers who do not know how their portion of the economy came to its present state. It is time to bring economic observation, economic history, economic literature, back into the teaching of economics. (Photo Felix Widler)

your proofs?" the physicist replies, "You can whip up theorems, but I leave that to the mathematicians." Proof is uninteresting to a physicist, compared to how something fits the real world.

Economists, to put it another way, have adopted the intellectual values of the Mathematics Department – not those of physics or electrical engineering or biochemistry, which they admire from afar. The situation is odd on the face of it. Philip Anderson, the distinguished physicist who brought the Santa Fe Institute together, explained the differences with "the differences in the amount of data available to the two fields." But economists are drenched in data, as hard as they want them to be. Odd – and dangerous.

Economics in American universities has become a mathematical game. The science has been drained out of economics, replaced by a Nintendo game of assumption-making.

IT began in 1947, when Paul Samuelson, then a young professor at the M.I.T. Department of Economics, published his Harvard dissertation, modestly entitled *The Foundations of Economic Analysis*. It was a brilliant piece of French rationalism, promising to put economics on an axiomatic basis. The book contained no facts about the economy; in the new program, that was left to the econometricians, another set of mathematical folk, though more in tune with British empiricism.

Economists were dazzled by the promise of rationalism and empiricism harnessed together. In that bright dawn, it seemed that economics could become what it had always wanted to be, a "social physics." Over the next 40 years Samuelson's dissertation was translated into first-year graduate programs across the United States, first in a book by Henderson and Quandt, more recently in another by Varian, killing off local traditions of pragmatic economics at the universities of Chicago, California at Los Angeles, Washington, and elsewhere.

But it was not merely an American development. In fact, in the style of many other anti-pragmatic movements, such as the Bauhaus in architecture, Europeans – especially the Dutch – took a leading role in devising the new game, which was then re-exported to the world through America. Jan Tinbergen was a pioneer of the econometric side of the program; on the theoretical side, Tjalling Koopmans in 1957 advocated separating theory from observation, "for the protection of both. [The program] recommends the postulational method as the principal instrument by which this separation is secured."

The news is that the program has failed and that many economists are becoming aware of the fact. Economics has learned practically nothing from the dual triumph

of mathematical economics and econometrics, if "learning something" means learning about how actual economies behave. That is not to say that economics has not advanced. It has. We know more than we knew in 1947 – but not because of the formal program launched by Paul Samuelson.

Or, to be completely fair to the program and the many excellent minds it has drained off from serious scientific work, we have learned a negative theorem: that one cannot solve great social questions standing at a blackboard. Over and over again in the past four decades, economists have come to believe that this or that theorem would give insight into the world. It is Kant's synthetic a priori. It didn't work. When someone proved on a blackboard that expectations are "rational" and therefore central banks cannot steer the business cycle, someone else proved a few months later that, with a slightly different set of assumptions, central banks *could* steer the business cycle. To speak mathematically, searching the hyperspace of possible assumptions has proved to be a waste of time, except for showing that it was a waste of time.

The same holds for standing at a computer and running econometric models, unless the data are based squarely on fresh observations. Time and again, economists have learned that if Professor X could show statistically, with the usual thin sets of official statistics, that the money supply determined the interest rate, Professor Y could in a few months show the opposite with the same sets. To speak statistically, fitting hyperplanes to conventional statistics proved to be a waste of time, except for showing the limitations of fitting hyperplanes.

WELL, so what? A group of professors have wasted their time since 1947. What of it?

The answer is that economists are crucial experts these days. No one of sense doubts that the world would be better off if everyone achieved the income of once poverty-stricken Switzerland. A dollar spent discovering the causes of modern economic growth, or finding the cure to the business cycle, or understanding the causes of monopoly, or persuading governments to adopt free trade, would mean more to humankind than ten dollars spent on space telescopes and particle accelerators. The fact that economics has wandered so far is a practical disaster.

The best minds in economics have been diverted into an intellectual game with as much practical payoff as chess or lotto. Instead of producing historical economists who know how banking came to Switzerland, or why British economic growth slowed a century ago, the graduate schools in economics have been producing scientific illiterates. They have produced macro-

economists who have not read a page of John Maynard Keynes and policymakers who do not know how their portion of the economy came to its present state. For their recent book, *The Making of an Economist*, Arjo Klammer and David Colander asked American graduate students whether having a thorough knowledge of the economy was important for academic success in economics. How many thought so? Just 3.4 percent. By contrast, 60% voted for the importance of mathematics and theory.

Many of the senior figures in economics have private doubts that they were right to follow the Samuelson program and are appalled by the current generation of graduate students (indeed, as Klammer and Colander show, the graduate students themselves are appalled). Few speak out, because they are still fighting the battle of their youth against the foolish opposition to any sort of mathematics. Most economists, myself included, agree with Léon Walras, the great economist who taught at Lausanne a century ago: "As for those economists who do not know any mathematics, who do not even know what is meant by mathematics and yet have taken the stand that mathematics cannot possibly serve to elucidate economic principles, let them go their way repeating that 'human liberty will never allow itself to be cast into equations' or that 'mathematics ignores frictions which are everything in the social sciences.'"

But economists know that a qualitative argument for something does not automatically fix its quantity. We need rain but not floods, sunshine but not the Sahara. A recent study by the American Economic Association has found that graduate schools are not teaching economics. Most thoughtful economists think that the games on the blackboard and the computer have gone too far, absurdly too far. It is time to bring economic observation, economic history, economic literature, back into the teaching of economics.

Economists would be less arrogant, and less dangerous as experts, if they had to face up to the facts of the world. Perhaps they would even become as modest as the physicists. □

*Prof. Donald Nansen McCloskey studied at Harvard and, since 1984, has held a chair in economic theory and history at the University of Iowa. In addition to his teaching, Prof. McCloskey likes to think and write about areas ancillary to economics, including the rhetoric of economic reasoning. Most recent among his many publications is *If You're So Smart: The Narrative of Economic Expertise* (Chicago: University of Chicago Press, 1990), which has enjoyed popular success. New books in preparation include a major text, *Economics: A New Approach*, co-authored with Arjo Klammer, to be published in 1992, and two others, titled *The Rhetorical Turn in Economics and the Human Sciences* and *Economics and the Conversation of Mankind*.*