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V. V. Chari

Hearing Robert E. Lucas, Jr.

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In September 2022, we organized, at the Federal Reserve Bank of Minneapolis, a conference to celebrate the 50th anniversary of the publication of “Expectations and the Neutrality of Money," by Robert E. Lucas Jr. V.V. Chari prepared a speech, which he delivered during the conference dinner. Tom Sargent, in his Keynote lecture, presented “Hearing Robert E. Lucas Jr.”

In our permanent effort to honor our infinite indebtedness to Bob for everything he gave us, and with the aim of sharing these wonderful writings to as many economists as possible, we decided to publish them in this issue.

A Toast to a Legend

V. V. Chari
Professor of Economics
University of Minnesota
and Consultant
Research Department
Federal Reserve Bank of Minneapolis

Bob Lucas is one of the great social scientists of all time. Lots of analysts have pored over his contributions: he has been referred to as the architect of modern macroeconomics, the pied piper of economics, a charismatic theorist, and one of the great defenders of conventional economic analysis.

Today, I want to pursue a different but related thought on why he so enriched our professional lives. Bob Lucas is a messenger of hope. What do I mean by that? Economic theory strives to be universalistic. We strive to use the same methods to analyze feudal Britain as we do to analyze the post-industrial United States or feudal institutions like American universities in the 21st century. As usual, Bob put it most succinctly. He said, "To a journalist, it is an article of faith that every day is different from every other day. To a social scientist, it is an article of faith that every day is the same as every other day." I want to extend that thought beyond time to fields of inquiry. Our analysis of individual motivations and household behavior is, to us, most satisfying when we use the same motivations to analyze behavior in an industrial organization setting, a labor market setting, or an asset pricing setting. What's more, we want to think of an individual's intertemporal elasticity of substitution in consumption as a parameter, just like consumption-savings behavior of portfolio choice. The deep structural parameters of preferences, to use Tom Sargent's term, are invariant to the environment, and, in particular, to policy. The same sort of thing is true of the parameters of technology.

Sniping critics may carp that this deep desire for a unified theory is a form of physics envy, but I prefer to think of this desire as coming from the conviction that a situational science whose analysis drifts like a will-o'-the-wisp depending on current circumstance is a science of no social value. Friedman's permanent income hypothesis was received with so much praise because it promised a theory of consumption behavior that was consistent with both the long-run time series and the cross sectional behavior of consumption. Growth economics need not be at war with the micro behavior of consumption.

It is fair to say that when Bob graduated from Chicago in the early 1960s, the aggregate economics part of the profession was grappling with two related problems. First, it seemed simply inconceivable that the Great Depression could be understood within a framework that contained the usual market forces. Second, the massive amounts of data that became available after World War II led to the usual flood of puzzles for the largely static theory that existed in those days. How did the great theorists of that era respond? Largely by throwing aside the straitjacket of conventional theory. They freely introduced free parameters unconnected with those of preferences and technology. Modigliani in his presidential address explicitly puts forth the view that the rate at which wages and prices respond to excess demand and supply are parameters given as part of the environment. The abstract Walrasian tatonnement process meant to operate in virtual time is now active in real time. Leon Walras invented the auctioneer as a way of explaining general equilibrium to lesser minds. Walras's mythical auctioneer in Modigliani's rendering becomes a dimwitted, slow-moving giant, who can adjust prices only very slowly. Does this giant change prices at different rates depending on time, place and commodity? Who knows? Walras's mythical auctioneer has changed from a simple pedagogical device to the centerpiece of empirical analysis and policy.

In that setting, what difference did Bob Lucas and a hardy bunch of revolutionaries (here I am thinking of Ed Prescott, Tom Sargent, and Neil Wallace, all under the leadership of Bob Lucas) make? Everything I say applies to all of these leaders. To see the impact they had, I want you to think of an alternate reality in which Bob and his compadres went off to a different profession: say, growing grapes and making wine in Northern California. My guess is that the future that would have confronted those of us who entered graduate school in the 1970s and 1980s would have been a bleak, dystopian one. It would have consisted of an endless array of ad hoc adjustment mechanisms, unintelligible discussions of disequilibrium, and unmeasurable constructs like excess demand and supply all taking center stage. One story for why I think this is a reasonable alternate reality. The brilliant Robert Barro, at the start of his career, devoted part of his considerable energies working on disequilibrium adjustment processes. Would he have allocated his time in that way if he had thought these ideas would soon be relegated to the trash heap of history? The question answers itself. I still remember most of the papers from that era that did not adopt the modern framework. They fell into a genre I call "tell a story, run a regression." The story or "theory" is at best vaguely connected to the data analysis. What constitutes success in this alternative reality? Get your equation into a large-scale macro econometric model! That is the bleak, dystopian reality that would have confronted us. It is a counsel of defeat and despair for economic theory.

Bob Lucas took a radically different approach, and the profession, to our delight, followed him. Lucas and Rapping is central to this new approach. Lucas and Rapping took the Great Depression head-on, asking whether a theoretical framework that emphasized intertemporal substitution in labor supply could account for historical data including the Great Depression. The vision of this approach is already clear. The approach must be empirical and quantitative because the questions are empirical. It must abjure the use of parameters not tied to preferences and technology. No slow wage adjustment parameter for them. An empirical paper must conclude with a number. Lucas and Rapping did. They estimated the elasticity of labor supply to be about 2. Loukas Karabarbounis can tell you why Raj Chetty's analysis says that for macro questions, the data even now say 2. But Lucas and Rapping was not yet a fully fledged general equilibrium model.

Expectations and the neutrality of money completed the circle. The goal was very clear. As Lucas says in the paper, the Phillips curve emerges not as an unexplained empirical fact but as a central feature of the solution to a general equilibrium system. To accomplish this task, Bob made some extraordinary innovations, especially the careful development of a rational expectations equilibrium in an environment with decentralized information. The main contribution of the paper was the message of the hope: without introducing ad hoc price adjustment, the Philips curve emerges as a central feature of equilibrium. No wonder Bob went on to say, “Beware of theorists bearing free parameters!” Why introduce free parameters if you don’t have to?

In his critique, Bob, in a series of graphic examples, showed that then-current methods (which are even now widely used in policy evaluation) suffered from a fatal flaw: the decision rules used were a mix of deep structural parameters and aspects of the policy environment. Notice what he was appealing to: the conviction among economists that there are deep structural parameters invariant to policy! But again, even while demolishing the then-popular research program, the message of the critique was actually one of hope. Bob proposed an alternative scientific program. Specify a general equilibrium model. Estimate, calibrate, or otherwise obtain parameters, and then conduct your policy evaluation. This was a message of hope and a clarion call for graduate students and young faculty. What could be more satisfying?

In his work on asset pricing, monetary economics, the economics of development, and estimating money demand, Bob set similar standards: an insistence on models that are empirically and quantitatively relevant, and a conviction that conventional economic theory suitably modified for the problem at hand could successfully address a wide variety of empirical challenges. All of which are messages of hope for the power of economic theory.

We are confronted in our profession now with those who loudly claim that with the right natural experiment, the right diff-in-diff strategy, and the right instrumental variables, we can jump directly to answers to policy questions without going to the bother of writing down a model. That way lies danger and a repeat of the policy errors that Lucas’s critique paper warned about. We need a Bob Lucas now to forcefully make clear that natural experiments can be a valuable source of data that our models should seek to replicate, and that until we do so, the data from these exercises are not ready for the prime time of policy evaluation.

When putting Bob’s contributions to science in the proper context, I start by noting that I think there exists a very American approach to scientific advancement in the natural and biological sciences. This approach combines endless tinkering to get the empirical magnitudes clear: think of Michelson and Morley, or Jonas Salk, or Bardeen, Brittain, and Shockley. It combines this focus on application with a desire to build grand theories: think Richard Feynman or Ernest Lawrence or Murray Gell Mann.

In his focus on empirical relevance, in his conviction that a common economic theory can be developed to address a wide variety of phenomena, in his flair for making great advances in all these areas, and in his charisma at persuading people to join in this riotously fun adventure, Bob Lucas stands as a giant of American science. I ask you to join me in a toast to celebrate the life and the accomplishments of Robert E Lucas, Jr., teacher, friend, messenger of hope, and American scientist extraordinaire!