

**THE ECONOMIST WATCHER: ECONOMIC CONTRIBUTIONS OF
DAVID COLANDER**

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July, 2017

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Abstract: This paper gives an appraisal of the work of David Colander. After a brief biographical summary, we look at his work in methodology and the role that institutions and “vision” play in his economic analysis. A crucial part of this has been viewing not only the economy but the economics profession itself as an adaptive complex system. This leads us to his major contributions to macroeconomics and economic education. We conclude with an overall assessment of his work to economics.

Introduction

There’s probably no other economist since John Kenneth Galbraith that has written so much about the myopic vision and foibles of the economic profession than David Colander. For decades, he has been watching and observing the economic profession. Overall, he hasn’t been happy with what he has seen. Though Colander doesn’t necessarily look at himself as a “dissenter,” he does admit to being “a gadfly” who works “hard and long” to come up with answers to economic problems by using what he calls the Yeah criterion: “A satisfactory explanation [that] involves an inner sense – an intuition – that tells me, Yeah, that’s right; that’s the way it works.”¹ He also admits to being the “economics Court Jester, who says what everyone knows, but which everyone in polite company knows better than to say.”² When one looks closely at Colander’s work, he has shown from the very beginning a dissatisfaction with how conventional economics has been practiced from its obsession with deductive and formalistic models to its lack of interest in understanding real-world problems. That dissatisfaction carries over to academia in general, putting him at odds with many in academia

¹ David Colander, “Confessions of an Economic Gadfly,” in Michael Szenberg, *Passion and Craft: Economists at Work*. Ann Arbor: University of Michigan Press, 1998, pp. 39-55.

² David Colander, Written Testimony, House Science and Technology Committee, July 20, 2010, p. 1. In this regard he might be to economics what Feynman (2001) was to physics, someone willing to state uncomfortable truths that others might hold back from publicly expressing.

who otherwise might agree with him. What makes him a “gadfly” in our opinion is not just his criticism of economics, but his efforts to make the profession honest by constantly questioning its institutional structure. We look at David Colander as the paprika in our economic stew. Without him, we would have less understanding of our profession and who we are as economists. This paper offers an appraisal of some of the contributions he has made to economics during his professional career.

Biography

David Charles Colander was born on November 16, 1947, in Jamestown, New York. He went to Jamestown High School where he met his current wife, Patrice, who was "the first girl I went steady with." They went separate ways after high school and met again at their 20th high school reunion. During high school, he was selected as an AFS student and spent a year studying at Wilhelmsburg Gymnasium in Germany. In 1966, he entered Columbia College and was President of his Freshman class. To get through college, he worked as a campus guide, bartender, and a soda seller at football games. At first, he wasn't quite sure what he wanted to major in. The areas he was thinking about were religious studies, mathematics, and economics. He finally decided on economics in part because it allowed him to spend a year abroad during his junior year. He went to the University of Birmingham, England, where he only studied economics since British undergraduates had to specialize. This meant that when he returned to Columbia, he started taking graduate courses. He did, however, take one undergraduate course on mathematical economics from Anwar Shaikh, who was a graduate student at Columbia at that time.

After graduating in 1970, Colander continued at Columbia for his graduate work, where he became friends with Alfred Eichner who introduced him to Post Keynesian economics. Edmund Phelps and William Vickrey were his dissertation advisors. Initially, he started writing a dissertation on optimal taxation, which he found boring. Teaching now as an instructor at Vassar College, Colander sent Vickrey a paper he was working on that looked for a market solution to inflation. With his dissertation ninety percent finished, he asked Vickrey if he could dump it and expand his paper on inflation into a Ph.D., which he could complete in one year. Vickrey said yes, and Colander switched topics. He received his Ph.D. in 1976 with a dissertation titled, “Public Finance Stabilization Theory for an Economy with Simultaneous Inflation Unemployment.” Colander would later say of his experience at Columbia: “The chance to plant the seeds of new ways of looking at problems is something that few modern economists have, and I am eternally grateful to Bill Vickrey and the almost-directionless Columbia Ph.D. program for allowing me that chance.”³

After finishing his Ph.D., Colander took a leave from Vassar and became a Brookings policy fellow. After Brookings, he moved to Oxford as a visiting scholar—he was married to his first wife, who was studying at Oxford as the first woman Rhodes Scholar. Throughout this time, he continued to work on his solution to inflation. He submitted his work to a number of mainstream journals, who all rejected his idea because it didn’t use a “formal model.” At this point, Colander decided to turn to “nonmainstream” economists for help. He got in touch with Sidney Weintraub who was editor of the *Journal of Post Keynesian Economics*. After some revising, Weintraub published Colander’s first authored journal article, “Income Policies: Tip, Wipp, and Mip” (1979). While Colander’s work on his anti-inflation idea was going nowhere, another economist, Abba Lerner, was making progress. They decided to join forces and do a

³ Colander, 1998, op. cit., p. 48.

book, which they entitled, *MAP: A Market Anti-Inflation Plan* (1980). The article and book started Colander's long professional writing career, which has led to hundreds of articles, over forty academic books, and numerous editions of his principles of economics text, a history of thought text (with Harry Landreth, 1989) and two not so successful intermediate macroeconomic texts. After a year visit at Nuffield College, Oxford University, his then wife received a full scholarship to the University of Miami Law School, and he taught there for a couple of years. When they split up, he was offered the Christian A. Johnson Distinguished Professorship at Middlebury College, which he accepted and held until 2013 (except for one year as the Kelley Professor of Distinguished Teaching at Princeton University). In 2014, he was appointed Distinguished College Professor at Middlebury, which allows him to teach courses in fields of his choosing.

Besides his teaching and research, Colander has been president of both the Eastern Economic Association and History of Economic Thought Society. He has also served on a number of editorial boards, including the *Journal of Economic Perspectives*, *The Journal of Economic Education*, *The Journal of Economic Methodology*, *The Journal of the History of Economic Thought*, *The Journal of Socio-Economics*, and *The Eastern Economic Journal*. Additionally, he chaired the AEA Committee on Electronic Publishing and was a member of the AEA Committee on Economic Education. Currently, he serves as associate editor of the *Journal of Economic Education*.

Colander has primarily been known for his work in economic education and in an area that he might have created called sociology of economics. His most important books in this field include *The Making of an Economist* with Arjo Klamer (1990), *Why Aren't Economists as Important as Garbagemen?* (1991), and *The Making of an Economist Redux* (2007). His

theoretical contributions have covered a wide range of topics. In macroeconomics, he promoted what he called “Post Walrasian Economics” (1996, 2006) which he sees as a forerunner to his current work in complexity economics (Colander and Kupers, 2014). In microeconomics, following Marshall, he has advocated for a "one thing at a time" approach that sees economic theory as a heuristic tool to be used in solving real world problems. Following this method, he has argued that economists should see themselves as engineers and craftsmen (or as Keynes said, dentists), and not as scientists who should use a craftsmen's methodology.

From the very beginning of his career, there are specific themes that Colander has been interested in. They include his critique of the MIT and Chicago approaches to economics with their formal models and lack of institutional awareness. Another theme is the evolutionary nature of economics. Colander considers what is mainstream, orthodox, or heterodox to be contextually defined. What might be a heterodox idea at one time in economics can later be part of the orthodoxy. Mainstream economics changes, albeit usually slowly. And what partly drives that evolutionary change is dissenters that are doing cutting edge work. What may first appear as foolish or an unorthodox idea might, over time, become more plausible by the mainstream once it is explored and understood – that is at least his hope. Ideally, how a dissenter knows their work is successful is when it becomes part of the mainstream. In many ways, this should be the goal of young economists – to be a dissenter and question current views at the beginning of their careers with the goal of changing the profession by the time they retire. Having said this, Colander is enough of a realist to know that the real-world of the economics profession might not work this way. Nonetheless, he believes if we are concerned about the advancement and intellectual growth of economics, it’s worth advocating with the hope of succeeding – or at least being the

gadfly who tries to provoke others into action and call things as he sees it. We now explore some of the intellectual contributions Colander has made to economics, the first is in methodology.

Methodology

Colander's interest in methodology has always been driven by his concern that economic analysis is seldom directed at real-world problems. In his first co-authored book written in 1980 with Abba Lerner on a proposal to cure inflation called MAP (market anti-inflation plan), Colander gives a name to his methodological approach and explains what it means:

“The methodology is realytic – an unusual word that indicates a contrast with analytic. This means that we are primarily concerned with solving real problems. We believe that the book also contributes importantly to extending theoretical understanding, but it does this only where necessary to solve the problem at hand” (Colander and Lerner, 1980, vii).

This pretty much sums up Colander's view about methodology, which also gives us a major insight of how he approached other areas in economics during his career, particularly in pedagogy and macroeconomic analysis. But he also points out that there are different aims to economic analysis, and each has a different methodology, which neoclassical economics seems to miss. The purpose of the science of economics is to understand reality. To do that, it's best to keep policy views and normative considerations out of the analysis, because it makes it harder to focus on an unbiased understanding of reality. The scientific methodology works reasonably well for this type of inquiry.

However, the purpose of *most* economic analysis is to provide answers to policy questions. This is best done using a different, more engineering-arts and crafts like methodology. It is much less restrictive than scientific methodology and includes values. Current economist's methodology does not distinguish between the science and policy branches of economics, which hurts both. He argues that practical problems require us to integrate normative questions and

institutional incentives into the analysis and to use (and justify) what the researcher thinks are reasonable judgments. For Colander, to use the scientific method for policy-making is like trying to put a square peg in a round hole.

Colander argues that the methodology he advocates is not unique to him, but was part of the classical methodological approach of Mill, Marshall, and Keynes. The “classical” approach recognized the importance of using the scientific method for a rigorous understanding of the world around us, but not for policy analysis. This classical methodological distinction was lost in the 1930s as Walrasian economics supplanted Marshallian economics. Walrasian economics drew policy analysis directly out of scientific understanding. In doing so, it lost much of the richness of classical policy analysis, which included a recognition of the need to blend values into policy, and presented itself as far more “scientific” than it was, or could be. In distinguishing methodologies, Colander argues that we should return to the Classical methodological structure summarized by Neville Keynes, John Maynard Keynes’s father. This structure distinguished not only normative and positive economics but also created a third methodological category, the “art of economics.” That “art” brings together normative and positive elements and blends them together to arrive at policy suggestions. Each of these three inquires has its own methodological method and putting them together and using them in economics requires Colander’s “realytic” that he mentioned in his first book. Not recognizing the distinction of different methodological approaches and how to use them can lead to problems in teaching economics.

Economic teaching is, in Colander’s view, far too focused on teaching the science and techniques used in scientific analysis. It gives far too little focus to the art and craft of economics—how to blend normative issues with scientific issues to arrive at a supportable policy recommendation. He believes what should be taught in graduate school is a recognition of the

three methods, and more importantly an effort to allow students to develop their intuitive sense of how they work together to come up with an intelligent and meaningful policy which is more of an art than a science.

In many ways, his methodology is associated with how Colander looks at how economics should be taught overall, both at the undergraduate and graduate level. Colander believes that students are attracted to economics because of a hope it will provide insights into real world problems that they are passionate about like global warming or racial inequality. But once they get into the heart of what is currently taught in economics, they find themselves lost in a world of mathematical models with farfetched assumptions that make them wonder how economics is related to real world problems. That might be useful for pure understanding of the science of economics. It is not useful for applied economic policy.

Colander suggests that if applied policy economics was approached as an art and craft instead of as a scientific inquiry more students would be interested in economics because it would be far more useful. In other words, economists should stop looking at themselves as “scientist,” but instead as “engineers.” This focus has led to his recent work that draws a sharp distinction between “science” and “engineering.” And it has the usual Colander twist to it. Engineering, Colander argues, is not “applied science.” It is much broader and often precedes science. It is imaginative; it is provocative, and it uses whatever methodology that works to advance understanding of the problem at hand. To think of engineering methodology as scientific methodology is to hogtie the engineer’s imagination and keeps the economist from considering the value judgments that need to be considered in policy. In the real world of policy making the scientific method is far too limiting. Instead, it should use the Richard Feynman (2001) method:

1. Write down the problem.

2. Think real hard.
3. Write down the solution.

It usually doesn't make sense with policy to gather large amounts of data and then test it in a scientifically appropriate way, with all its i's dotted and t's crossed to arrive at a definitive model. You have to make judgments and take shortcuts. Applied policy methodology should give guidance on how to make those judgments and what shortcuts are allowable, and which ones aren't. Currently, we don't do that in policy analysis. Overall, people are not interested in whether your policy is grounded in scientific truth. Instead, they want economists to come up with a reasonable, practical solution to solve an important policy issue that will affect the lives of millions of people.

To complicate the picture even more, in the real world, consumers, firms, and policy-makers face uncertainty and limited knowledge. How do you act in such a world? According to Colander the best method is "heuristics." People use heuristics, and so should economists. He argues that economists need to go beyond just "scientific methods" and use historical, social, moral, or any method they think might provide them with insights in how to come up with a reasonable solution to an economic problem. The heuristics approach has led Colander to complexity economics or more appropriately for him a "complexity vision of economics." The traditional view of complexity is an evolving system that changes through the interaction of adopting agents in different settings that can lead to a variety of path dependencies and outcomes that are unpredictable. In a recent co-authored book, Colander has expanded the ideas of complexity to connect with his methodological approach from the 1980s (Colander and Kupers, 2014). Instead of thinking of policy as deriving from an economic model, Colander focuses first on particular policy goals or outcomes, and what combination of methods, models or applications will allow an economist to meet those policy goals. The approach is more of a

“vision” the economist has of how the economy might work and from that vision, they try to come up with the best way to deal with a policy problem. This leads us to Colander’s work in institutions, professional incentives, and the importance of vision. Most mainstream economists assume that they are searching for the truth. Colander believes this is a poor description of what economists really do and inconsistent with their assumptions that individuals only want to maximize their utility for private gains. Instead, he argues that reality is more complicated than we think.

The Role of Vision and Institutions

For neoclassical economists who believe in the power of free markets, institutions don't matter (except if they cause a barrier in the market). For Colander, they do matter, and not just in an economy, but also in the economics profession itself. You can't understand why economists do what they do unless you understand the institutions they operate in and the academic incentives they face. Some of his most insightful work has been to look at the institutional structure of the economics profession and evaluate the incentives it gives to students, young professors, and the profession as a whole. That structure and what we can do to change it to make the profession more open to new ideas and interesting questions has been a primary goal of Colander.

In his classic book, *Why Economists Aren't as Important as Garbagemen?* (1991), he argues that like all of us in the real world, economists respond to incentives. The profession, as an institution, provides certain incentives and economists respond. Colander then asked: What impact does this have on how economics is done? The models they use? The policy recommendations they make? How “value-free” is the profession? These questions led him to look more carefully into the institutional structure of the economics profession and the incentives it provides, which has been a major part of his sociological work in economics for decades now.

This also led him to the importance of “vision” in economic analysis. The overall vision of how one sees the economy, how it works and its goals is important for how economists do their work and what they consider to be the most interesting issues and questions. His belief of the importance of “vision” for economic analysis is closely connected to his lack of focus on the concept of paradigm, so often used in economics, particularly among heterodox economists. Paradigms are for science, and, for Colander, most of what economists do is not science, but a type of engineering art and craft. Their models are heuristics, to be used when helpful, and discarded when not. He believes that one’s vision or worldview provides a better working approach to tackle economic problems than the use of paradigm found in scientific analysis. Colander’s worldview is one that emphasizes incentives, bottom up organizations, and recognizes the role of power in society – and in the economic profession. It is one’s vision, not the particular formal scientific models that holds economics together, he believes. One’s Vision helps one to decide which models to use, and thus is far more important than any specific model. Overall, one’s vision provides the economist the broad perception they need for their analysis and how they look at the world, while one’s formal methods are what one uses to capture that vision.

Colander believes there are variations of economists’ “vision” out there and that it is important for economists to discuss those visions instead of ignoring them. Visions necessarily involve normative judgments, and economists should be open about them, not hide them under the mantle of a so-called science. Differences in vision are not to be resolved by scientific or empirical work alone, but through open and honest dialogue with the type of devil’s advocate argumentation that Mill (1859) emphasized in *On Liberty*. Colander calls it argumentation for the “sake of heaven.” That type of discussion is missing in the mainstream profession, and, in

Colander's view, also in heterodox economics. Each group talks among themselves as opposed to talking to their "enemy" who in Colander's view are not the enemy, but just holders of a different vision. One can only understand the others' vision by fully engaging them and their best advocates. Debating "straw men" or even "steel women" arguments is not enough; one must discuss and engage the real holders of alternative visions. His criticisms of the lack of honest discussion among mainstream, right and left heterodoxy has gotten Colander into trouble both with orthodox and heterodox economists who structure their thinking about the profession around paradigms and science. This means that one sees change in economics based on Thomas Kuhn's paradigm shift model, where Colander sees change as happening mostly within the profession that should be constantly evolving over time. This has led him to his interest in complexity economics.

Colander's vision of the economy is that of an evolving complex system of interacting agents. The problem is that it is unclear how to formalize that vision, and what emphasis to give to different aspects of that evolving system. He believes that best way to do this is by using the best analytic and empirical technology available in economics, which means that it will change over time. That is part of the reason why he has been interested in cutting edge work in economics. Colander's strongest attack against neoclassical economics is directed at the "Walrasian" dynamic stochastic general equilibrium model in macroeconomics. He is optimistic and believes that eventually the DSGE model will be replaced with a set of heuristic models consistent with a complexity vision of the macro economy, as the workhorses of applied macro. But it will take many years and possibly decades. He sees his role as a minor nudger that's trying to move the profession in that direction a bit faster. Colander's "complexity vision" embraces, as we had mentioned, a large number of different approaches for economic analysis. What's

important for Colander is that the economist approaches economic problems and policy with a general complex vision of the economy. The economic problem being considered will determine the choice of models and methodology. The benefit Colander sees is that the economist now has the freedom to use a variety of different methods to deal with important policy decisions. Let us know explore in more detail Colander complexity vision and economics.

Colander as Complexity Economist

One of Colander's strongest interests has been in macroeconomics, both with its theory and policy outcomes. His dissertation topic was in macro, which eventually led to his work with Abba Lerner on an anti-inflation program called MAP. During the early part of his career, from 1979 to 1986, the majority of his published papers focused on this topic or some variation of it. He then left the field for several years and focused on history of economic thought, economic education, and broader methodological issues.

In the early 1990s, his interest in macroeconomics was reignited with the fall of the Soviet system and the beginning of the economic transition in Eastern Europe (Colander et al., 1993). This led him to think about broader macro theoretical issues such as the relationship between microeconomics and macroeconomics. He also found the standard macro theories like IS/LM and DSGE far too simple for an understanding of the macroeconomic problem. The IS/LM is inappropriate because its comparative statics cannot capture the complex dynamics in a macro system and it fudges on what is going on. DSGE is inappropriate because it reduces macroeconomics to an equilibrium model when the important issues are to be found in the dynamics. In an important paper, "The Macrofoundations of Microeconomics" (1993a), he expressed his fundamental disagreement with the microfoundations project being developed by

the New Classical School in macroeconomics. His criticism is not surprising, given his disagreement with rational expectations early in his career and their use of Walrasian equilibrium analysis (Colander and Guthrie, 1980-81). He developed his criticism in his presidential address to the Eastern Economic Association on “Marshallian General Equilibrium Theory” (1995). Colander’s concern was with both the hard core New Classicals and the softer core New Keynesians, who modified the DSGE approach by adding ad hoc assumptions about wage or price stickiness. Given that the models missed the complex dynamics that Colander saw as key to macroeconomics, along with their assumptions of general Walrasian equilibrium with rational expectations, their ad hoc adjustments to their core model did not add theoretical insights into the macro problem.

His dissatisfaction with both the New Classical and New Keynesian models led him to formulate an alternative, which he called *Post Walrasian Macroeconomics*.⁴ In his edited volume, *Beyond Micro Foundations: Post Walrasian Macroeconomics* (1996), he gives us, for the first time, his clearest formulation of what is Post Walrasian macroeconomics.⁴ As expected from his earlier work, it includes his belief that macroeconomics provides a foundation for microeconomics. But it also showed a new and deeper interest in complexity economics, which he had encountered by reading and interacting with economists working at the Santa Fe Institute and other places. Complexity started to play an important role in his Post Walrasian approach. It also influenced his views about history of economic thought and economic education:

Taking the complexity of the aggregate economy seriously undermines much of the theorizing that has been done in macro over the last 50 years. It means walking down from the Walrasian mountain. For example, how can one look for rational micro foundations in a world that is so complex that on pure analytic grounds

⁴ The term obviously calls for a comparison with “Post Keynesian Economics.” Colander follows the American Post Keynesians in leaving out the hyphen in the name. While Post Keynesian economics can be viewed as an extension of Keynesian economics that often seeks to go back to the work of Keynes himself and his ideas, Post Walrasian economics was specifically anti-Walrasian, critical of the Walrasian general equilibrium framework, and seeking to move beyond it. It may be that this confusion contributed to the term failing to catch on more widely in the profession.

just about anything can happen. Yes, if one is careful enough to spell out an otherworldly (or at least other-islandy) story, one can come to an analytic solution that bears some relation to what we observe, but, for most, that analytic solution is intuitively unsatisfying as a description of the actual economy. Only people dealing in the same otherworldly world are interested in it. Yes, we can get graduate students to deal in that otherworldly world – if they are given no choice – but is it one they would want to deal with if we didn't hold such 'job or no job' power over them? We think not (Colander, 1996, p. 7).

The complexity cat was now out of the bag for Colander, and it was not going back in.

What becomes clear from Colander's work is that the foundation of his Post Walrasian macro is complexity macro, although he never really uses the term to describe his Post Walrasian vision. Complexity economics became more of an important focus for him. He expanded his interest beyond macroeconomics to edit two volumes related to complexity, *The Complexity Vision and the Teaching of Economics* (2000a) and *Complexity and the History of Economic Thought* (2000b). David Colander had fully become a complexity economist by the turn of the century.

As has been his pattern, Colander shifted his focus again in early 2000 to now broader methodological issues. An example of this was his "The Death of Neoclassical Economics," (Colander, 2000c). In the paper, he argued that neoclassical economics was narrower than many thought with its marginal analysis developed in the nineteenth century by Jevons, Menger, and Walras and later codified by Samuelson in the 1930s and 1940s. He argued that while neoclassical economics as defined persists in textbooks, in reality, as cutting edge work, it had been dead for some time. The question now is what should be the new economics replacing it? Colander made his proclamation: complexity economics. Much of his work on the methodological and sociological issues involved in his declaration was done in conjunction with the authors of this paper (Colander et al., 2004a, 2004b, 2007-08, 2010; Rosser et al., 2010, 2013; Holt et al., 2011). Their arguments stirred considerable controversy and disagreement, even though many agreed that complexity could be taken as a serious approach and alternative to neoclassical economics (Lavoie, 2012; Lee, 2012). Effectively there were two parts to their

argument: one theoretical regarding what constitutes complexity economics, and the other sociological of how does the replacement process work of replacing one economic approach with another and what are the consequences to the various categories that current economists use to label themselves.

Regarding the first issue, a central claim was that complexity economics involves changing the ideas of rationality, self-interest, and equilibrium that dominated the old neoclassical economics and continue to dominate much of conventional orthodox economics. These different views arose from the nature of complexity itself, with much discussion of what it is and its many competing definitions involved. Most of those definitions involve ideas of “the whole being greater than the sum of the parts,” with many involving nonlinear dynamics. Nevertheless, important differences exist between dynamic, computational, hierarchical, structural, and other conceptualizations of complexity economics (Rosser 2009). Even so, all of these approaches imply different views regarding rationality, self-interest, and equilibrium from conventional economics.

Areas, where they saw complexity ideas as especially important, include evolutionary game theory, transdisciplinary ecological economics, behavioral economics, econometric methods beyond classical statistics, nonlinear economic dynamics, agent-based modeling, and experimental economics (Holt et al., 2011). These cutting-edge approaches all are part of moving from the economics of rationality, selfishness, and equilibrium to that of purposeful behavior, enlightened self-interest, and sustainability in a world of multiple equilibria. Such ideas provide alternatives to such established methods as using DSGE models to understand macroeconomics.

Along with this perspective came an analysis of how the economics profession has been developing in connection with this, initially propounded in Colander et al. (2004a, 2004b). This

controversial view argued that in considering categories of economists, there are both intellectual and sociological aspects. The intellectual aspect divides orthodox views from non-orthodox views, the latter including heterodox ones. Orthodox views are essentially holdovers of the dead neoclassical economics, with non-orthodox approaches taking other forms. The sociological categories are mainstream versus heterodox, with mainstream not necessarily tied to any particular set of ideas or theoretical approaches but including the dominant figures of the profession, those who control the leading departments, journals, and funding sources. This opens the door to there being non-orthodox mainstream economists, with such individuals as George Akerlof and Vernon Smith fitting that description. In this view, heterodoxy involves being both non-orthodox and non-mainstream.

This argument has drawn criticism (Lavoie, 2012; Lee, 2012) from those who see mainstream economics as being inexorably tied to neoclassical orthodoxy. They see this argument as disrespecting heterodox economics (and possibly even heterodox economists), and they argue that heterodox economics must struggle to confront and battle all forms of this mainstream orthodoxy, even when it appears to be cutting edge non-orthodox. They see figures such as Akerlof and Smith as becoming coopted by this mainstream establishment. They also argue that portions of the complexity economics agenda, such as behavioral economics, may be becoming absorbed and also coopted into this establishment, which must be resisted.

Colander and his coauthors have replied that they support heterodox ideas but think that what is involved is a matter of how to approach the disputes and that it's better to use honey rather than vinegar (Rosser et al., 2013). An overly aggressive approach alienates open-minded mainstream economists, and that ultimately heterodox economists must win the intellectual battle on its merits, though it is recognized that there are true academic barriers that heterodox

economists have to overcome that might seem and even be unfair. In any case, Colander has been publicly involved in strongly criticizing the predominant orthodox approaches such as DSGE models as he did in Congressional testimony among many other places (Colander et al., 2009; Colander, 2010a).⁵

Complexity and Public Policy

As we have mentioned, David Colander's interests have always been about real world problems, so it is no surprise that his move into complexity economics would lead him to its policy implications. While we suggest that this concern only appeared after his consideration of the methodological issues involved, he did make initial forays in this direction as early as 2000 in a paper with William Brock (Brock and Colander, 2000). Many of the ideas he would return to later were presented in the paper, particularly the problem that a complexity framework raises serious doubts about the predictability or usefulness of standard models that claim to give definite answers to outcomes of policies. Complexity induces a Lucas Critique more serious than that of Lucas, who argued that using rational expectations in a general equilibrium model would overcome the problem. Complexity economists know that this is not the case; we face deeper uncertainties.

⁵ The question clearly arises as to what school of economics besides that of complexity economics does David Colander belong to? In the eyes of most, he has long been associated with the Post Keynesian school due to his early work on MAP with Abba Lerner, with incomes policies long something advocated by many Post Keynesians, and many of his ideas are consistent with some of the various Post Keynesian sub-schools. But he published numerous papers with the late public choice economist Ken Koford (Colander et al., 1993) and he also wrote praise of the late Austrian economist, Larry Moss (Colander, 2010b). He is arguably mainstream in having served as president of several associations and on committees of the American Economic Association, but he has long noted that he usually served as one questioning what was coming out of those committees and has labeled himself "a gadfly" (Colander, 1998b), and he has criticized mainstream economics in his work on economic education and other writings. (See, for instance, "Intellectual Incest on the Charles," 2015a). We have put him in the broader category of "dissenting economist"—he seems to be the voice of dissent in any group that he is part of. He regards that dissent as friendly, and part of a continual reevaluation of itself that every group should continually do, this latter role making him into the economist watcher. Many see it as less friendly, and Colander as a pain in the neck.,

In such a world can anything be usefully said about policy making? Colander’s most ambitious attempt at answering this question is in his book with Roland Kupers (Colander and Kupers, 2014). One does not find much in the way of specific policies being proposed in this book. What one does find is promotion of a particular approach of how policy *should be made*. Given the lack of our ability to rely on specific models, what we must fundamentally rely on is “educated common sense.” Furthermore, the book strongly calls for the superiority of “bottom up” policies that in some sense spontaneously emerge or at least are formulated from the lowest level. The book also argues for a different form of market and state interaction that are closely connected, along with a new evaluation of how we make policy and the type of norms we should use that arise out of the complex dynamics of the economy and broader society.⁶

We have the following from Colander and Kupers:

In the complexity policy frame, one starts with a recognition that there is no ultimate compass for policy other than a highly educated common sense. Scientific models provide, at best, half-truths. In our view, the education of that common sense very much includes a basic appreciation of complexity, as well as of humanities, mathematics, and others. Policy compasses are created and evolve, they are fallible products of a particular time and place, and must be treated as such. The nature of the relation between market and government, as well as top-down versus bottom-up solutions, as well as the property that policy itself is part of the complex system, is posited pretty clearly in the following ... the duality of market versus government is a product of the standard economic policy frame itself. That duality disappears in the complexity frame – but inevitably other contrasts appear. Within a complexity frame, both the more active top-down “government” solution and the less active bottom-up are seen as having evolved from the bottom up. Within this frame, the policy solution is an element of the system, not outside it (Colander and Kupers, 2014, p. 21).

And as they put it a few pages later (ibid., p.25):

“In the complexity frame, a well-functioning market is a consequence of previous and successful government metapolicy.”

⁶ At the beginning of their book, Colander and Kupers report that they were motivated to write it after they met at a climate policy conference where policy issues were posed as being predominantly market-oriented or predominantly government-regulation oriented, with both of them finding this dichotomy to be overly simplistic in a complex world. Of course, climate models themselves have long relied on nonlinear dynamics of a complexity sort (Lorenz, 1963).

While they eschew advocacy of particular policies, they do point to specific examples of what they are talking about. One example is the “shared space” system of traffic control in the town of Drachten, the Netherlands, which was developed by Hans Monderman. As they note, when one drives into Drachten one does not find stop signs or street lights or even sidewalks. Yet traffic flows smoothly and with few accidents. Of course, it helps that Drachten is not a great metropolis, and such a system may not work in larger cities. While they recognize that this looks like a possible example of “no government market fundamentalism,” they argue that this is not the case. Rather it depends on an existing institutional framework, a preexisting system of myriad rules and regulations, drivers’ licenses, car safety standards, a broader legal framework, and so on. It is not a spontaneous anarcho-capitalism, but a carefully framed and bounded system that allows for the emergence of order.

Admiring such systems opens the door to take some Austrian views seriously, especially those of Friedrich Hayek, who was a serious student of complexity (Hayek, 1967). Given Colander’s long advocacy of Keynesian and Post Keynesian approaches, and with the book peppered throughout with quotes by Keynes, this raises the obvious question of how to relate these two views, which they do in a section entitled, “Reflections on the Complexity Frame: Hayek versus Keynes.” We suspect many will not agree with their arguments in this section, and we are not sure we do either, but their arguments are seriously made and consistent with what they argued throughout in the book.

While recognizing that Hayek and Keynes disagreed on many things, most certainly about appropriate policies in the Great Depression, Colander and Kupers argue that the two have more in common than most are willing to recognize. Most controversially they argue that both are ultimately for bottom-up policies, although with different bounds. Thus, Hayek worries about

constitutional level rules and frameworks for allowing the market to operate in a bottom-up manner, whereas Keynes was more willing to countenance strong top-down government intervention in “one-off” special cases such as the Great Depression. But they maintain more generally, Keynes was also fundamentally for a bottom-up approach most of the time. In particular, they cite Keynes’s friendly letter (Keynes, 1944) to Hayek on the publication of his *The Road to Serfdom* (Hayek, 1944). There he expressed his “moral and philosophical sympathy” for Hayek’s arguments. Nevertheless, he disagreed with Hayek on certain points, including on the matter of planning, arguing that “...we almost certainly want more [planning]. But the planning should take place in a community in which as many people as possible, both leaders and followers, wholly share your moral position” (Colander and Kupers, 2014, p. 40). They interpret this as showing that Keynes ultimately supported bottom-up planning that would “minimize government intervention into the market, but still achieve socially desirable ends” (ibid). The goal of the government should be to bring about a bottom-up “ecostructure” that achieves this goal. Not all will agree with this interpretation, but as usual from Colander, it is a provocative idea. We now turn to Colander’s contributions to pedagogy and economic education.

The Economist Watcher and Educating Economists

It is in economic education that the various strands of the dissenting career of David Colander come together most clearly and fully. Initially, in his career, he was like most academics, an educator by teaching students. But after a decade into his career, he started to write and do research in pedagogy and economic education. One of his major contributions to economics is writing textbooks. Indeed, it is through his textbooks that Colander has become most widely

known, primarily due to the success of his introductory textbook, which was first published in 1993b and came out with its 10th edition in 2017.

While his Principles textbook may have the widest reading, he made a substantial contribution with Harry Landreth with their *History of Economic Thought* book that went through four editions making it one of the more successful books in the field during that time. This reflects Colander's view of the importance of history of economic thought to the broader discipline of economics and his frustration with trends in the profession that have led to a downgrading of history of economic thought and its near disappearance as a field in graduate programs in economics, which he sees as damaging the discipline. The book not only covered a set of expected past figures in economics, but it also brought the history up to the present, and the controversies he believes are important in today's economic debates. He did this by showing how current issues are grounded in economic thought from the past. We share Colander's frustration with the profession and their lack of support and interest in history of economic thought and understanding its importance in current controversies.

Colander also published two textbooks on intermediate macroeconomics that did not fare well, and only had one edition. One reason for the failure of these books was that Colander tried to change the focus of macro, giving it a more history of thought focus and a more nuanced connection between theory and policy. Differences in theory did not necessarily drive differences in policy views. The profession was not ready to accept that view. His frustration with the entrenched view in macroeconomics has only increased with time.

He has also been the author of eleven editions of a general textbook, *Social Science*, from 1984 through 2017. This was his first textbook, which shows he has always looked at economics from a transdisciplinary perspective that is part of social science. Indeed, he has on more than

one occasion declared that focusing on a broader social science approach is what economists should be doing or try to do.

However, with all these textbooks, as we mentioned, the book that he's probably most widely known for, even though it's not the main source of his reputation within the economics profession, is his Principles textbook, *Economics*.⁷ Many have written textbooks, but few have them succeed and continue for ongoing editions, especially if they do not toe the mainstream line. Part of its success reflects Colander's witty and engaging writing style, but it also reflects his ability to bring economic ideas and issues down to earth for practical application. Also, we believe, is his ability to bring in a political economy perspective that presents a strongly Keynesian and even Post Keynesian view, along with other perspectives as well like the Austrian and Feminists.

Although it would be removed after the first edition of his Principles text, Colander fought against the use of AS/AD analysis in macro pedagogy for years, arguing that it misled students. He even demonstrated how a Keynesian view of aggregate supply and demand analysis shows a serious problem in macroeconomics where one might see vertical AS and AD curves that do not intersect. However, in later editions, he succumbed and presented a more normal AS/AD presentation, albeit with numerous nuances and caveats, which if students followed them would let them know that the AS/AD model was highly problematic.

Colander's textbook treatment of AS/AD reflects his ongoing effort to balance the conventional with the less conventional. This effort is symbolized by a statement he has made in many venues, the "15 percent rule." The rule states that for a new textbook to be successful, it cannot deviate by more than 15 percent from whatever is the leading textbook in the field that it

⁷ Also his vita lists numerous other textbooks. However, some of these are edited readings, and a large number of the rest are related to his Principles textbook: study guides, drill set, supplements, readers, and other such materials with various coauthors.

is in. After all, it is professors who determine which textbooks are to be adopted, and most do not wish to deviate too much from what they learned in graduate school. For the great majority, a 15 percent deviation is about as much as one can hope for, and that might be too much. Of course, there's the occasional exception to the rule, but they are so occasional that any would-be author of a textbook should not expect to be the exception. Usually, these exceptions arise when a field first appears, such as environmental economics in the 1980s, when there's not yet a standardized approach in a field. With respect to Principles textbooks, probably the most dramatic exception was Samuelson's text, which first came out in 1948 where it successfully incorporated many Keynesian ideas. More recent books, such as Mankiw's, have been moving away from Keynes. But Colander's *Economics* has been one of the major textbooks that still carries the Keynesian tradition.

In the mid-1980s, when Colander was writing the first editions of his textbooks, he was also working on how the profession changes through the education of its graduate students. His first study, with Arjo Klamer, "The Making of an Economist," appeared as an article in 1987 in the *Journal of Economic Perspectives*, and then in expanded book form in 1990. This influential study led to the formation of the Committee on Graduate Economic Education (COGEE) of the American Economic Association, which issued reports (Krueger, 1991; Hansen, 1991) that largely confirmed Colander and Klamer's conclusions.

Their study was based on surveys of 212 economics graduate students at six leading departments: Harvard, MIT, Columbia, Yale, Chicago, and Stanford.⁸ The main thrust of their study was that the profession seemed to be turning out "idiot savants" who were mostly being taught "esoteric" mathematical techniques with little limited experience to develop policy or

⁸ This list is close to a set of supposed "top seven" schools that does not include Columbia (Colander's alma mater) but adds Princeton and Berkeley.

even empirical analysis, besides understanding economic history even though 19 percent of graduate students were interested in the history of economic thought. A field that Colander believed was especially important so that students could get a broader perspective of economics. The study also showed particular biases at different schools. Student views on policy at Chicago were more pro-laissez-faire than those at the other schools like Harvard and MIT. Overall, 46 percent of graduate students were studying macroeconomics with about 35 percent believing that fiscal policy was an effective policy tool; 17 percent believed in rational expectations, with the rate higher at Chicago as might be expected. However, the biggest complaint was a lack of coverage of policy issues. Unsurprisingly, Colander and Klammer beat the drum loudly on this point, which was largely confirmed by the later studies coming out of the COGEE.

Despite all the outcry following these studies, it appeared that inertia won the day, with little apparent change. However, over time changes did happen gradually in graduate economic education. In 2002, Colander was the Kelly Professor of Distinguished Teaching, and while there, he noticed that graduate teaching had changed. This led him to revisit the topic without Klammer, who had moved to Amsterdam, by redoing his original study with students at top schools. The results were published in an article in the *Journal of Economic Perspectives*, “The Making of an Economist Redux” (2005) and later in a book (2007).

Colander found several changes from the earlier study, some of which he approved, some of which he did not. The one he approved of the most was a shift from an emphasis on pure theory to a greater emphasis on empirical analysis, although there still was a strong emphasis on mathematical ability and techniques. In 1987, 57 percent had focused on mathematical techniques but in his new study it was down to 30 percent; and those focusing on empirical methods rose from 16 percent to 30 percent. However, looking at those studying

macroeconomics, he found a decline in acceptance of fiscal policy from 35 percent to 21 percent, while acceptance of rational expectations rose from 17 percent to 25 percent. At the same time, there was a convergence of views across the six schools, with Chicago coming to resemble the others more. Probably the most disturbing was an essentially complete collapse of interest in history of economic thought.

While pleased with the increased emphasis on empirical studies and analysis, he expressed frustration at a continuing narrowness of approach and ability to do good policy. This led him to declare “Mathematical ability is great, but creativity is much more important” (Colander, 2005, p. 198). This followed his long and frequent calls for greater emphasis on considering “the art of economics.” While students were learning “an eclectic mainstream,” he cited Krueger (1991) for a “reason-based economics” rather than a “technique-based one,” with more emphasis on institutional economics as well as behavioral and experimental approaches. He mourned that the educational environment was now unlikely to produce the quality of economists like Richard Easterlin, Douglas North, Mancur Olsen, Paul Streeten, Gordon Tullock, Charles Kindleberger, and James Buchanan, all of whom exhibited a broad and historical knowledge that went beyond the mathematically based techniques learned in top graduate schools in the United States.

While Colander has spent much time and effort on trying to directly educate students through his textbooks and to get the profession to change how it teaches its graduate students, his ultimate concern has been how the profession *itself and how it learns and changes*. While he has often expressed optimism for an open “eclectic mainstream,” he has come to express deep frustration with the apparent unwillingness of most of the profession to substantially change its ways and views in the face of overwhelming evidence that it should.

We have discussed Colander's interest and focus on complexity and how it should be integrated into economics, both in theory and policy. But it also shows up in his work in economic education, most notably in a book, he edited on a conference he organized at Middlebury College, *The Complexity Vision and the Teaching of Economics* (2000a). His contributions may be the most significant in the book, which include the introduction, a chapter on economic policy with William Brock, and a chapter on "Complexity and the Teaching of Economics," which was developed even further in Colander and Rothschild (2010). The chapter especially focused on the work at the Santa Fe Institute and how to integrate that work into textbooks. He covered a variety of issues, but perhaps the most important one was his emphasis on the work of Brian Arthur (1994) on the importance of positive feedbacks in the economic system (Arthur authored the first chapter in the volume after Colander's introduction). While he argued that complexity ideas are more realistic than those found in standard neoclassical economics, he confessed that "I do not see the process of integrating Santa Fe complexity ideas into the texts as easy" (p. 135). This contrasts with the greater optimism as well as urgency he expressed in the introduction, which was highlighted as a quote inside the cover flap:

It is in the real world where the action is; and if we want to interest students in economics, and make economics more relevant, the teaching of economics must reflect the real world, not abstract deductive models that lead nowhere fast, and may lead nowhere slowly.

Of course, he always tempered these sorts of statements by bringing up his 15 percent rule regarding how much textbooks can change and remain successful.

But the frustration of trying to integrate complexity ideas into textbooks pales in comparison with his efforts to get the profession to take complexity more seriously. Colander's frustration had increased since the economic crisis of 2008-2009 when he hoped the profession would respond and change. These feelings came out in a recent paper, "Why Economics Textbooks

Should, but Don't, and Won't Change" (2015b). Ironically, his ultimate explanation for why there will be no change returns to his old argument that the economics profession itself is a complex adaptive system, filled with nonlinearities and positive feedback effects, which allows it to manifest emergent outcomes that are irrational as these reflect the incentives facing the individuals within the system, even as many of these individuals at some level or other "know better" or at least should. He focused on two large main issues where the profession failed in its response to recent events before making his more fundamental argument.

The first of these, unsurprisingly, involves macroeconomics with the persistent dominance of DSGE models, despite their patent failure and inability to either forecast or explain the events of 2008-2009. Despite his long advocacy of a Post Walrasian approach in place of DSGE (1996, 2006), he sees an entrenched establishment that fears losing its human capital and responds by making minor tweaks to their favorite model: "The ad hoc tweaked DSGE model can be made to fit just about any data series" (2015b, p. 230). This resistance to change, and most fundamentally the continuing belief in the fundamental stability and rationality of the economic system, Colander sees as continuing in the textbooks, as he declares:

There are now some discussions in the texts of macro-prudential policy, zero lower bounds, structural stagnation (although much of that discussion goes under the name, secular stagnation), quantitative easing, and even some mention of Minsky moments. But, in the underlying macro model of a stable economic system composite aggregate rationality remains (2015b, p. 230).

The other big issue is that of income distribution, responding especially to Piketty's (2014) influential work, as well as the Occupy movements that sprang up in recent years in numerous nations. He sees Piketty as missing the boat and ultimately representing a neoclassical perspective where income distribution is determined by technology, with the possibility of some redistributing through progressive taxation as the main possible response. Drawing on his history of economic thought, he goes back to John Stuart Mill and Alfred Marshall to argue that what is

needed is a change in the institutional structure of the economy so that distribution itself is more equal, thus reducing the necessity of engaging in the politically difficult exercise of redistribution (Colander, 2014). He notes that it is much easier not to give somebody something than it is to take it away from them once they have it. He calls this the “Takeaway Principle” and argues that it should be a key principle of public policy.⁹

In keeping with his self-description as a gadfly, he describes how the complex adaptive system of the economics profession generates self-reinforcing mechanisms that keep it from moving on, which reward individual economists for continuing to profess and teach the old standard models. Much of this gets back to how even the 15 percent rule may be too optimistic of how textbook authors must adhere to established views if they wish to sell their books, with publishers pushing the same material because of different pressures on them. Colander eventually argues that the ultimate irony is that even the crisis itself provided incentives for the profession not to change, that it reinforced the self-satisfaction and inertia of the profession, especially when it came to the teaching of economics. Near the end of his 2015b paper, he hammers down: “The larger the crisis, the more students want to hear what economics has to say; more sign up for economics, and more revenue flows into economics reinforcing the existing institutional structure. This leads the profession to respond: “Why change what we are doing? We are doing quite well, thank you” (2015b, 234).

Conclusions

Whether viewed as a gadfly, a court jester, a dissenter, or an economist watcher, David Colander has played a unique and important role in the economics profession for a good 40 years. He has

⁹ In typical tongue and cheek fashion, he states the rule in quantitative form stating that it is 4.5 times harder to take something away than not to give it to them, claiming that he is basing this on how long his children cried when he said no to wanting an ice cream cone, and when he took it away from them after he had given it to them. We suspect that this was not a scientific study, and see it more as his making fun of many of the empirical statements that economist make based on highly limited data.

always been one step ahead of others to identify the latest flaw or foible in the ongoing evolution of the established order of the economics profession, even as he has not refrained from playing the same role for those who combat the establishment but themselves create their own sub-anti-establishments that sometimes can be as narrow and misguided as the establishment. He has been the scourge of all self-satisfied views in economics of whatever stripe, constantly pushing for clarification and reform in both thinking and practice, often using his wit as well as his wisdom while doing so.

After obtaining his PhD from Columbia in 1976, he initially worked with Abba Lerner on their innovative approach to macroeconomic policy, the Post Keynesian but market-based market anti-inflation plane (MAP). After establishing himself at Middlebury College as his base, he would proceed to move back and forth between macroeconomics, methodology, the history of economic thought, and economic education, as he challenged orthodoxies throughout the discipline, both with academic articles and books, as well as influential textbooks in these various fields. He would come to serve on important committees of the AEA, although generally as the token heterodox gadfly put on to keep the committees honest, perhaps most importantly the ones dealing with the education of economic graduate students. Also he would continue to emphasize innovative approaches to economic policy.

Even as he moved through these sub-fields of economics, during the 1990s he increasingly came to adopt the emerging complexity approach to economics as his main methodological approach to economic questions. This vision led him to challenge the established economic assumptions of rationality, self-interest, and equilibrium in economics. Ultimately this would lead him to view not only the economy itself as a complex adaptive system, a critical insight for understanding the dynamics that led to the macroeconomic crisis

that transpired in 2007-2008 and its following Great Recession, but also to see the economics profession itself as complex adaptive system, feeding back on itself in many unexpected ways. The final irony of this system of this complex set of feedbacks may well be his recognition that even as the economics profession failed to forecast or understand the Great Recession, the surge of interest by the public in studying and understanding economics as a result of that event led to the institutional reinforcement of the profession's established ways of doing things. But that has not prevented him from continuing to watch and provoke the profession as he continues onward as one of the most important and influential "gadflies" in the economic profession today.

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