An Alternative Theoretical Framework for Economics

Meir Kohn

As a profession, economics is thriving. The number of economists is large and growing. The volume of their output is exploding—more articles are published each year in a growing number of journals. As a science, however, economics is not doing so well. The questions addressed by all those articles seem to be getting smaller and smaller. And there seems to be little or no progress on the big questions of economics such as economic development and growth, economic fluctuations, and the proper role of government in the economy. Most of the articles published are econometric, and the results of many are of questionable quality.

These problems of economics are, however, far from unique. There has been much talk in recent years of a general crisis of science. Despite ever more resources devoted to scientific research, the pace of scientific progress has slowed markedly. And the problems with statistical work in economics are part of a much broader "replicability crisis" in statistical work in general.

A major underlying cause of the general crisis of science is bureaucratization. Since World War II, scientific research has increasingly become concentrated in universities, and universities have become increasingly bureaucratized. Academic advancement has come to depend on metrics such as the number of publications in leading

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journals and the number of citations. Judging the significance of work is rarely even attempted: "deans can't read, but they can count." Incentives matter, and these bureaucratic incentives promote low-risk, low-value research. Bureaucratization is the result, in turn, of two related developments—the increasing adoption by universities of the model of the German research university, and the growing role of government in funding scientific research.

While economics shares with science in general the underlying cause of its problems, there is a specific factor in economics that has exacerbated these problems significantly—namely, a major wrong turn in economic theory. I will begin by describing the nature of this wrong turn, and then consider why it has been accepted so readily and why, indeed, it is a wrong turn. I will then discuss how economics has responded to the problems created by the wrong turn in theory and why that response has been inadequate. I will argue that the only real solution is to adopt a different theoretical framework. I will then describe, very briefly, a theory I have been developing and explain why this offers a better theoretical framework for economics as a whole. I will conclude by considering how economists might be persuaded to adopt this alternative framework.

The Wrong Turn in Economic Theory

In the period immediately after World War II, there was a transformation in the nature of economic theory—a change both in substance and in method. This transformation has its origins in the work of two great economists—Paul Samuelson and John Hicks.[1] Samuelson wished to reformulate economic theory in the language of mathematics. He believed that doing so would promote greater clarity and precision, and he hoped that mathematization would lead to a formal unification of the whole of economic theory. While Samuelson's goal was formal unification, Hicks's goal was substantive unification. Hicks believed that much of economics could be understood in terms of the theory of value—the part of economics that seeks to explain the pattern of relative prices in an economy and the resulting allocation of resources.

[1] See Samuelson (1947) and Hicks (1939).

Samuelson's goals and Hicks's proved highly complementary. The theory of value lends itself to mathematization. Hence, reducing economics to value theory offered a promising route to a more general mathematization of economics. The resulting mathematical model of value theory rapidly came to dominate economic theory. Indeed, for most economists, it *became* economic theory; this is the theory taught in today's economics textbooks. I will refer to it in what follows as "the conventional theory."[2]

The conventional theory came to dominate so quickly and so easily, because it met the needs of bureaucratic science. Mathematical modeling is technically difficult, but easy to grade. Moreover, it requires little or no acquaintance with actual economies—speeding up the production of publishable articles.[3]

However, these so-called advantages of the conventional theory come at a cost. Conventional theory constitutes a major narrowing of economic theory—in terms both of subject matter and of method. Before the Hicks-Samuelson revolution, the theory of value had been only one part of economics—certainly an important part, but still only a part. Other substantive areas included money and economic fluctuations, economic growth and development, economic institutions, and economic history.[4] It turned out that these areas of economics, and others, could not be understood purely in terms of the theory of value and that, for them, mathematical modeling was not a fruitful theoretical method. This narrowing of economic theory has been a major reason for the lack of progress on the big questions of economics, since most of the big questions lie precisely in those areas in which conventional theory offers limited insight.

Responses to the Limitations of Conventional Theory

Economists have responded to the limitations of conventional theory in different ways. One way is denial: the areas of economics not

[2] For a full discussion, see Kohn (2004). There, I call the conventional theory the "Value Paradigm." It is also often called, inaccurately, neoclassical economics (see, e.g., Colander 2000).

[3] Mathematical modeling is an example of what Akerlof (2020) calls "hard" economics—the kind of economics the discipline favors.

[4] Schumpeter (1954), written just before the Hicks-Samuelson revolution, gives a sense of the much greater breadth of economics at that time.

amenable to the application of conventional economic theory are considered uninteresting.[5]

Some economists, however, have persisted in finding such areas interesting, and they have tried to develop particular theories, outside the conventional theory, appropriate to each area. Examples include the new institutional economics, transactions cost economics, public choice theory, and Austrian economics.[6] Such attempts to go beyond conventional theory have been handicapped, however, by the lack of an overall theoretical framework into which they all fit. This limits the development of each by confining it to its own ghetto, outside the mainstream. To escape such ghettoes, some economists have attempted to fit their special theories into the Procrustean bed of conventional theory, with universally poor results.[7]

Yet other economists—in fact, most economists—have responded to the limitations of conventional theory by turning away from "theory" altogether, embracing instead a largely atheoretical applied econometrics.[8] Work of this kind, like mathematical modeling, has the advantage of meeting the needs of bureaucratic science: it is technically challenging and, being atheoretical, can largely avoid the issue of whether it is important.[9] However, avoiding that issue has allowed some econometric research to degenerate into "freakonomics"—the application of econometric methods to issues of questionable value in terms of advancing economics as a science.[10]

[5] As Coase (1994: 4) remarked, "Sometimes, indeed, it seems as though economists conceive of their subject as being concerned only with the pricing system and anything outside this is considered as no part of their business." Akerlof (2020) describes the resulting neglect of many areas of economics as "sins of omission."

[6] I call these theories, collectively, the "Exchange Paradigm," and discuss how this differs from the "Value Paradigm" of conventional theory (Kohn 2004).

[7] In Kohn (2004), I describe such attempts as "hybrid theorizing," offer several examples, and discuss why they have failed.

[8] For most economists, theory means mathematical modeling. However, mathematical modeling is only one form of theorizing.

[9] This is another example of Akerlof's "hard" economics.

[10] "As Levitt sees it, economics is a science with excellent tools for gaining answers but a serious shortage of interesting questions" (Levitt 2009: An Explanatory Note). Uninteresting: the origin of the wealth of nations. Interesting: whether Sumo wrestling is corrupt.

Moreover, it is increasingly recognized—and not only in economics—that good statistical work is impossible without an appropriate theoretical framework (see Pearl 2018; Henrich and Muthukrishna 2019). Only in the context of such a framework is it possible to judge whether an empirical question is important or not. And only in the light of theory is it possible to judge whether a statistical result is confirmatory or surprising. This matters, because surprising results are in greater need of further confirmation.[11] Indeed, the atheoretical nature of much statistical work has been a major contributor to the replicability crisis.

These different responses to the limitations of conventional theory have therefore been, at best, only partly successful. What is really needed is a better theoretical framework. As it happens, I have one to offer! I did not set out to develop such a framework. I stumbled on it inadvertently.

How I Discovered an Alternative Theoretical Framework

I was trained as a mathematical theorist. However, from the beginning, I was very aware of the limitations of conventional theory, and I believed the answer lay in producing better models.[12] But after many years of attempting to produce such models, I came to realize that better models are not the solution: however good my models were, they provided very little insight into how real-world economies worked.

Then, by chance, I discovered a completely different approach to theorizing. At the time, I was writing a textbook on financial intermediaries and markets, and I read some financial history as background. I found, however, that financial history offered much more than this: it offered more insight than any amount of mathematical modeling into why different financial institutions existed and what they did. So I switched from mathematical modeling to deriving theory from the observation of actual economies—in effect, a switch from Plato to Aristotle (Herman 2013).

[11] "By providing ways to develop clear predictions, including through the use of formal modeling, theoretical frameworks set expectations that determine whether a new finding is confirmatory, nicely integrating with existing lines of research, or surprising, and therefore requiring further replication and scrutiny" (Henrich and Muthukrishna 2019: 221).

[12] See, e.g., Kohn and Shavell (1974); Kohn (1978, 1981).

My new method of theorizing might be described as one of "patterns and stories."[13] The first step is to study and observe an economy, or part of an economy, and to search for patterns in the evidence (the evidence may be qualitative as well as quantitative). The economy in question can be a contemporary economy, but historical economies have some advantages: they offer a longer period of observation, greater variation, and relative simplicity of structure. Their greatest advantage, however, is that the evidence is readily available from the extensive work of economic historians. There is much less evidence available for contemporary economies: economics does not value or reward mere description.[14]

The next step is to think of stories that might explain the observed patterns. The theory emerges from these stories. The theory is verbal rather than mathematical, describing and explaining the patterns observed in the historical evidence. Nelson argues that such a theory is nonetheless very much an abstract body of reasoning: "Certain variables and relationships are treated as important, and others are ignored. There generally is explicit causal argument" (Nelson 1998: 500).[15]

I decided to apply the method of patterns and stories to a more systematic study of financial systems—going back to the beginning in early preindustrial Europe. It soon became clear, however, that the most interesting and important economic question about financial systems is why, and how, they matter. Seeking an answer to this question led to mission creep: my goal expanded into developing a general theory of economic progress, which, among other things, would explain the role of the financial system.

As the work progressed, I came to realize that my theory of economic progress offered an alternative theoretical framework for economics as a whole—a much better one than that provided by conventional theory. That is not to say that my theory explained everything, but rather that it provided a framework into which much of the work outside the conventional theory could fit quite comfortably.

[13] Although this method was new to me, it is actually far from new. I have taken the description "patterns and stories" from the title of a book by Leamer (2009)—an advocate of the method.

[14] When I was working on my PhD thesis, I wanted to look at some industry studies, and I was shocked to find how few such studies existed. I think I found two.

[15] Nelson calls the method "appreciative theorizing."

An Overview of My Theory

Obviously, I cannot describe my theory in full in the space of a short article. So, to illustrate my method and to give the flavor of my theory, I will describe some important patterns I observed in the history of preindustrial Europe and then offer some stories that seem consistent with those patterns.

Patterns

Medieval society was made up of three classes—nobles, merchants, and peasants and artisans. Members of these three classes made their livings in very different ways. Peasants and artisans made their living from production. Merchants made their living from commerce—from buying and selling the goods and resources that others produced. And nobles made their living from predation—from taking by force the goods and resources that others produced or traded.

Commerce and Production. In the 11th century, which is where my study begins, there was very little commerce. Production was mainly for subsistence and for tribute in kind to the noble class. There was some local exchange, but little long-distance trade. Productivity and income were low, and there was little or no economic progress. As commerce developed, long-distance trade expanded, and producers reoriented their production increasingly to production for sale. This commercialization of production was accompanied by changes in how production was organized and in the technology it employed.

The typical commercial producer was a family firm (or family farm), usually specialized in a single product; in some cases, there was additional specialization by stage of production (e.g., in textiles—spinning, weaving, and finishing). Such enterprises sold their output to merchants and purchased from merchants the inputs and intermediate products they required. Some groups of enterprises formed associations—for example, craft guilds in manufacturing.

Expansion of long-distance trade and the commercialization and reorganization of production were accompanied by technological progress—the result of the adoption of more productive technology and its gradual improvement through use. Little of this technology was newly invented. Some had been known since classical times, but had been long neglected because its use had been unprofitable; other technology had been invented in the Muslim

world or in China and had found its way to Europe through trade. These changes in the organization of production and in the technology it employed raised productivity, increasing both the income of producers and the supply of goods.

At the same time, commerce—the mediation of exchange—was also experiencing reorganization and technological progress. Merchant enterprises grew larger, employing labor and capital from multiple families. Trading centers expanded, providing more and better commercial infrastructure, such as organized markets and courts for the resolution of disputes. Associations were more important in commerce—including merchant guilds and the governments of commercial cities. The technology of commerce advanced too—both physical technology, such as ship design, and social technology, such as accounting, arithmetic, and forms of enterprise and association.

Predation and Government. Economic progress in preindustrial Europe was interrupted repeatedly by periods of widespread war. For example, the Commercial Revolution, a period of developing commerce and rapid economic progress that began in the 12th century, was cut short by the widespread wars of the 14th century. The harm of such wars came not so much from the destruction they caused, which was modest by modern standards, but from the government predation needed to finance them. In particular, predation on commerce raised trading costs and significantly reduced the volume of long-distance trade.

Feudal government, early in the period, was a patchwork of two very different types of government—the government of kings and nobles (predatory government) and the government of commercial cities (associational government). Over the centuries, both types of government evolved. Predatory government consolidated, became more centralized, and developed a bureaucracy—evolving into the predatory state (France and Spain were examples). Associational government, too, consolidated, but became more decentralized—evolving into the associational state (the Dutch Republic and, later, England were examples).

The different forms of government differed significantly in how hospitable they were to economic progress. Peacetime feudal government and the associational state were highly hospitable; wartime feudal government and the predatory state were inhospitable.

Stories

We can understand these patterns in terms of two interacting processes: economic evolution and political evolution.

Economic Evolution. Market expansion induces a productivity-enhancing reorganization of production and the adoption of more productive technology. The resulting increase in productivity raises incomes and increases supply, creating further opportunities for expansion of the market. This is the core process of economic evolution.

In addition to the core process, economic evolution encompasses several auxiliary processes that are driven by the core process and feed back to reinforce it. One auxiliary process is the parallel process of reorganization and technological progress in commerce already mentioned; the resulting fall in trading costs contributes to expansion of the market. In another auxiliary process, expansion of the market and the resulting reorganization of production increase the demand for technology, inducing the invention of new technology; the adoption of the resulting new technology increases productivity, leading to further market expansion.[16]

Economic evolution—the core process together with these and other auxiliary processes—is self-perpetuating: it requires no external cause. In the absence of obstacles, economic progress should continue unabated.

Political Evolution. Obstacles, unfortunately, are not absent: the most important obstacle is predation. And the principal source of predation is governments. Indeed government can best be understood in terms of predation. Government is an organization created to deploy force—either for the purpose of predation (predatory government) or to protect a population against predation (associational government).

Government evolves, in a process of political evolution that involves both interaction among governments—principally through war—and interaction between governments and the process of economic evolution. Since a government's success in war depends primarily on its ability to mobilize resources, there is a selective advantage for forms of government that can mobilize the resources they need without destroying their economies. Sustained economic

[16] Yet another auxiliary process is the creation of new work (see Jacobs 1969).

progress in the West was the result of the emergence and increasing dominance of such a form of government—the associational state.

Given the centrality of commerce and predation in my theory, I will refer to it in what follows as the commerce-predation theory of economic progress.

How the Commerce-Predation Theory Differs from the Conventional Theory

There are three fundamental differences between the commerce-predation theory and the conventional theory. These differences result from a difference in purpose and a difference in the method of theorizing.

The Three Fundamental Differences

The three fundamental differences between the commerce-predation theory and the conventional theory are:

- process rather than equilibrium;
- commerce, predation, and production rather than production alone;
- individual behavior as social rather than atomistic.

Process Rather Than Equilibrium. The conventional theory understands the economy as being in a state of equilibrium.[17] Its core assumption is that individuals exploit fully all opportunities available to them. If they do, there is no reason for anyone to change their behavior, and the economy as a whole is in equilibrium. The nature of this equilibrium may depend on external factors—such as technology and political institutions—and so the equilibrium will be different when these factors are different. Indeed, because of the assumption of equilibrium, change in general, and economic progress in particular, must be the result of a change in such external factors.

In contrast, the commerce-predation theory understands the economy in terms of processes—in terms of the coevolution of commerce, predation, and production. Economic progress comes

[17] For more on the meaning of equilibrium in conventional theory, see Kohn (2004).

from within the economy as people exploit unexploited opportunities in commerce and production. Since exploiting such opportunities creates new opportunities, this process is self-perpetuating. Economic progress, therefore, requires no external cause. Moreover, so long as economic progress continues, there is no equilibrium: the only economy in equilibrium is a stagnant economy.

Commerce, Predation, and Production Rather Than Production Alone. The conventional theory understands the economy in terms of a single economic activity—production. However, it does recognize commerce and predation implicitly by assuming the existence of two disembodied spirits—"the market" and "government." These spirits hover over the economy and do what is required of them. However, conventional theory has nothing to say about what they are and how they work.[18]

In contrast, the commerce-predation theory, as its name suggests, recognizes commerce and predation, no less than production, as full-fledged economic activities—as ways people make a living. It is commerce that lies behind "the market" of conventional economic theory: the formation of prices and the allocation of resources are consequences of this economic activity.[19] Similarly, as we have seen, it is the economic activity of predation that explains the existence of government, what it does, and how it evolves.

Individual Behavior as Social Rather Than Atomistic. Conventional theory recognizes that production is social: individuals specialize and depend on the specialization of others to meet their own needs. However, conventional theory treats individual behavior as atomistic. Individuals do not coordinate with one another directly or explicitly. Their actions are coordinated solely through their response to prices—with prices provided by "the market" (see Coase 1937).

[18] Of course, various economists have had much to say about these things, but none of it is a part of conventional theory—of textbook economics.

[19] "Until comparatively recently, nobody has pointed out that the Walrasian model leaves out the existence of a third class of economic agent essential to the functioning of markets—professional intermediaries who are both buyers and sellers simultaneously without whom markets as an institution could hardly function. It is the professional dealers or merchants who make a 'market' by being always ready to do business. . . . In practice, they fulfill the role assigned to the 'heavenly auctioneer' of Walras" (Kaldor 1996: 10).

The commerce-predation theory recognizes that all three activities are social and that, in each, individual behavior must be coordinated. The means of coordination certainly include prices, although prices are provided by commerce—itself an economic activity requiring coordination. But the means of coordination also include direct and explicit interaction among individuals—within enterprises, associations, and other structures.[20] Individual behavior, therefore, is social.

Why the Differences?

The three differences between the conventional theory and the commerce-predation theory are the result of differences in purpose and of differences in theoretical method.

Conventional Theory. The basic purpose of conventional theory is to understand the formation of prices and their role in the allocation of resources: it is a theory of value. Hicks argued, and the profession has largely accepted, that much of economics can be understood in these terms.

The theoretical method of conventional theory is mathematical modeling. A mathematical model is created as an analog of the real-world economy. Creating such a model necessitates some simplifying assumptions: the model cannot express every detail of reality—only those that are essential to its purpose. Equilibrium, production only, and atomistic behavior are all simplifying assumptions. They are not intended to be descriptively realistic; they are made purely to eliminate inessential detail and thereby to facilitate the creation of the model.

Conventional theory serves its basic purpose quite well. It sheds considerable light on the formation of prices and their role in allocating resources and on how prices and allocation might differ under different circumstances. Given the purpose of conventional theory, the assumption of equilibrium is a useful and acceptable simplification; given its method, this assumption is essential. Given its purpose and its assumption of equilibrium, the exclusive focus on production, with commerce and government represented as abstract spirits, is

[20] Even coordination through prices frequently involves a contractual dimension that necessitates direct interaction between counterparties.

again a useful, and relatively harmless, simplification. And, given all of this, the assumption of atomistic behavior, too, is useful and relatively harmless. I will argue, however, that these simplifying assumptions are not harmless when it comes to understanding other areas of economics.

The Commerce-Predation Theory. The purpose of the commerce-predation theory is to understand economic progress. Its method is inductive rather than deductive: it begins by observing actual historical economies and attempts to identify patterns and to explain those patterns.

The first important pattern is that actual economies are constantly changing. The commerce-predation theory therefore attempts to understand the economy as a process. A second important pattern is that actual economies consist of more than just producers: many individuals make a living from commerce or government. Moreover, it is largely the actions of these individuals that drive the process of change and that have the greatest impact on the pace of economic progress. A third important pattern is that human behavior is highly social. Recognizing this is critical in understanding the organization of production, and even more so in understanding the organization of commerce and government.

I would venture that the commerce-predation theory, too, achieves its purpose reasonably well—shedding considerable light on the processes of economic and political evolution and how they interact to determine the pace of economic progress.

How the Commerce-Predation Theory Resembles Classical Economics

While the commerce-predation theory differs fundamentally from conventional theory, it bears a strong resemblance to classical economics. Conventional theory takes one element of classical economics—the theory of value—and discards everything else. The commerce-predation theory embodies many of the elements of classical economics that conventional theory leaves out.

The commerce-predation theory shares with classical economics a common purpose and a common method. The central purpose of classical economics, like that of the commerce-predation theory, is to understand economic progress—the origin of the wealth of nations. In terms of method, classical economics is a big tent, but its

characteristic method is, like that of the commerce-predation theory, induction from historical and comparative evidence.[21] Because of these similarities in purpose and method, the commerce-predation theory's position on its three major differences with conventional theory generally conforms with the position of classical economics.

Classical economics mostly understands the economy in terms of process rather than equilibrium.[22] And, for classical economics as for the commerce-predation theory, economic evolution is self-perpetuating. If nothing holds it back, economic progress is the "natural course of things."

Classical economics understands the economy in terms of predation and commerce as well as production. According to classical economics, what holds back the natural course of economic progress is predation and government. Many classical writers of the 18th, 19th, and early 20th centuries discussed predation and its relation to government (see Macfarlane 2000).

Classical economists also recognized the importance of commerce as an economic activity. For example, Menger ([1871] 1981: chap. 4) recognized that trade is the result of commercial entrepreneurship, that trading costs limit the extent of trade, and that increasing productivity in commerce lowers trading costs and leads to expansion of the market. All these are features of the commerce-predation theory.

Again, like the commerce-predation theory, classical economics understands human behavior as social rather than atomistic. Indeed, Adam Smith wrote a whole book on the subject (Smith 1759).[23] Smith and later writers in the classical tradition emphasized the economic importance of organization and the role of reorganization in increasing productivity.[24]

There is, of course, another explanation for the affinity between the commerce-predation theory and classical economics—influence.

[21] This is the method of the Smithian tradition within classical economics. There is also a Ricardian tradition that is closer in terms of method to conventional theory (this closeness is sometimes characterized as the "Ricardian vice").

[22] See Schumpeter (1954) on the different employment of process and equilibrium analysis by different theorists.

[23] See also Vernon Smith (1998).

[24] See Aligica and Boettke (2009), Langlois (2007), Lavezzi (2003), Macfarlane (2000), and Mazzoleni and Nelson (2013).

Certainly, many of my stories have their origin in classical ideas.[25] For example, Smith's principle that "the division of labor is limited by the extent of the market" (Smith [1776] 1976) is the basis of my core process of economic evolution. But let me emphasize that I did not begin by studying classical economics and then look for confirmation in the historical evidence. Rather, as I explained earlier, I studied the evidence first, with a quite different purpose in mind, and arrived at conclusions very similar to those of classical economics—often unaware at the time of the similarity (a tribute to my ignorance!).

The Commerce-Predation Theory as a General Framework

For most economists, conventional theory provides a general framework for understanding all aspects of the economy. The commerce-predation theory offers an alternative framework. However, the meaning of framework is different in the two cases. Conventional theory claims to explain all the different features and phenomena of the economy—that is, to provide microfoundations. In contrast, the commerce-predation theory offers a macrostructure: it can show how all the different features and phenomena fit into the economy as a whole—that is, how they relate to one another and how they interact with one another.

There are two reasons why the commerce-predation theory can accommodate additional features and phenomena so readily. The first is that its structure is modular: it consists of a number of processes that interact with one another. There is no obstacle, in principle, to integrating additional processes. We have seen, for example, that the core process of economic evolution can be supplemented by adding to it several auxiliary processes that interact with it and reinforce it.

The second reason the commerce-predation theory can more readily accommodate various features and phenomena of the economy is that it is grounded in observation. Its fundamental features are therefore unlikely to be inconsistent with reality. In contrast, the fundamental features of conventional theory are

[25] I came across these ideas primarily through the work of economic historians. The method of economic historians, too, is—naturally—induction from historical and comparative evidence. So it is not surprising that many economic historians find classical economics more congenial than conventional theory.

simplifying assumptions—made for mathematical tractability and, by definition, not realistic. While they are useful and relatively harmless for the theory of value, they can be obstacles to understanding other aspects of the economy.

I will discuss here, very briefly, some areas of economics that are a bad fit for conventional theory but fit very well within the framework of the commerce-predation theory. I will organize the discussion around the three fundamental differences between the two theories.

Some Things Make Little Sense under the Assumption of Equilibrium

Economic Growth and Development. The equilibrium of conventional theory is a state in which all possible opportunities are being exploited. Conventional theory does not, therefore, offer a promising framework for understanding economic growth and development—processes of change over time (see Kohn 2009). Forcing economic growth and development into an equilibrium framework leads only to confusion. The commerce-predation theory, a theory of process, was derived to understand economic progress and succeeds in doing so reasonably well.

Entrepreneurship. In conventional theory, in an equilibrium in which all possible opportunities for profit are being exploited, there is no place for entrepreneurship (Blaug 2000; Holcombe 2007). Indeed, conventional theory postulates individual behavior that is the opposite of entrepreneurial. Individuals are passive: they take their circumstances—the prices at which they can exchange and the resources and technology at their disposal—as given. And they adjust to them as best they can. No individual has any effect on the world.[26]

Nonetheless, many economists have devoted a great deal of attention to entrepreneurship and to the role it plays in the economy. Most noteworthy in this respect is the work of Schumpeter and of the Austrian school in general.[27]

[26] The assumption of perfect competition implies that the individual is insignificant: his action—indeed his existence—has no impact on equilibrium prices (Makowski and Ostroy 2001).

[27] On the former, see Schumpeter ([1911] 1955) and Becker, Knodsen, and Swedberg (2011). On the latter, see Kirzner (1973), Blaug (2000), and Rizzo (2009).

Entrepreneurship is not only consistent with the commerce-predation theory but also an essential part of it. Entrepreneurs are anything but passive: they identify and *create* opportunities for profit and act on them. It is their action that drives the process along. Entrepreneurs are responsible for market expansion, for the reorganization of production, and for technological progress. And they play an equally central role in the evolution of commerce, predation, and government. In particular, entrepreneurship in predation plays a major role in political evolution.

Technological Progress. Economists who have studied technological progress make the crucial distinction between the invention of technology and its adoption (Bhidé 2006; Blaug 2000; Comin and Ferrer 2013). And it is the adoption of technology that matters for economic progress. Conventional theory can accommodate invention but not adoption: in equilibrium, all available technology that might increase productivity must already have been adopted. In contrast, in the commerce-predation theory, the adoption of technology is part of the core process of economic evolution—driven by market expansion and the reorganization of production.

Moreover, even conventional theory's treatment of invention is not very illuminating. Either technology is treated as "manna from heaven," or it is treated as just another good, produced in much the same way (Howitt 2008). Economists who have studied invention find the process to be far more interesting than that—for example, the interplay between the demand for new technology and the supply, and the creation of new technologies by combining existing technologies (Jacobs 1969; Arthur 2009). All this fits naturally into the commerce-predation theory: indeed, the process of invention is one of the auxiliary processes of economic evolution.

Economic Fluctuations. We have seen that economic progress in preindustrial Europe was disrupted repeatedly by wars. By the 19th century, the more advanced economies were suffering increasingly from a different kind of disruption—significant fluctuations in economic activity that seemed to originate from within the process of economic evolution itself. As a result of these disruptions, productive capacity lay idle, and workers found themselves unemployed. Classical economists offered a variety of explanations for these disruptions, and these came to constitute a separate area of economics—the theory of economic fluctuations.

Since economies experiencing such fluctuations are failing to exploit their full potential, they are difficult to understand in terms of conventional theory.[28] In contrast, the commerce-predation theory accommodates economic fluctuations quite readily. It is a theory of process not of equilibrium, and there is no reason to believe the process need be a smooth one. Indeed, it is easy to think of reasons for disruptions and subsequent periods of adjustment. For example, market expansion might render particular industries unprofitable in the face of imported goods that are cheaper or better. Or the adoption of new forms of organization or new technologies might increase productivity so rapidly that significant numbers of workers are left without profitable employment. Of course, economic evolution will eventually generate new opportunities for those displaced in this way, but that will take time.[29] In the conventional theory, however, there is no time: there is the equilibrium before and the equilibrium after but no path from one to the other.

The Gains from Trade. In conventional theory, the gains from expanding trade are the consequence of an improved allocation of resources in the new equilibrium. Melitz and Redding (2014) attempt to measure the gains in overall productivity from this effect, and they find them to be, at most, modest. They suggest, instead, that the response to trade "involves myriad changes in the organization of production throughout the economy" and that this can result in much larger gains in productivity. Such a process does not fit easily within the equilibrium framework of conventional theory. However, it fits the commerce-predation theory very nicely: it is, indeed, its core process.

Some Things Make Little Sense without Commerce and Predation

The failure of conventional theory to recognize commerce and predation as economic activities limits its usefulness in many areas of economics. However, such areas fit comfortably into the framework of the commerce-predation theory, which recognizes all three economic activities.

[28] Keynes did develop an equilibrium theory of fluctuations (see Kohn 1986), but his was a different kind of equilibrium. Nonetheless, because of the equilibrium nature of Keynesian theory—rebranded as "macroeconomics"—it became an adjunct to, if not a part of, conventional theory—"microeconomics."

[29] Kling (2012) offers a treatment of fluctuations very much along these lines.

Development. Conventional theory is of limited help in understanding economic development, not only because it assumes equilibrium but also because it ignores commerce and predation. Conventional theory simply assumes that markets exist, while the central problem for economic development is the emergence of markets (North 1994). It is commerce, of course, that is responsible for this. Since there is no place for commerce in conventional theory, relatively few development economists have recognized the important role of commerce in the process of development. Peter Bauer is a notable exception (see Bauer 2000).[30]

In the commerce-predation theory, commerce is at the center of the process of economic evolution and so of economic development. Indeed, the commerce-predation theory implies a useful definition of economic development—something the conventional theory lacks. The key difference between a developed economy and a developing one is the extent of commerce. Without commerce to mediate long-distance exchange, the extent of the market is very limited. In these circumstances, producers produce mostly for their own consumption; this is the primary reason for their low productivity and low income. Development, therefore, can be defined as commercialization—the process of transforming a subsistence economy into a commercial economy.[31]

According to the commerce-predation theory, economic evolution—including economic development—is a self-perpetuating process. That is, development should happen of its own accord. If it does not, the reason is almost certainly predation—principally by government and its agents. This would not seem implausible to anyone familiar with developing, and non-developing, economies.

Finance. Because conventional theory assumes away commerce, it is unable to make sense of finance. Of course, economists have done a great deal of useful work on the role of finance and financing in the economy—especially in the context of economic development.[32] However, this work has been hindered rather than helped by conventional theory.

[30] Many of Bauer's criticisms of conventional development theory are consistent with my arguments for the commerce-predation theory. For a survey of Bauer's theory of development, see Dorn (2002).

[31] The commerce-predation theory is derived from the evidence of preindustrial Europe, which underwent just such a process of commercialization/development.

[32] See Rajan and Zingales (1999) for a useful survey.

For example, some economists have recently expressed concern about "financialization"—the growing share of the financial system in the economy (Kling 2015). Rather than resources being devoted to production, they are being wasted on unproductive financial transactions: why waste resources on something that can be done costlessly by a disembodied spirit?

In contrast, in terms of the commerce-predation theory, commerce—including finance—is not a waste. Commerce mediates and facilitates exchange in general; finance is the specialized branch of commerce that mediates and facilitates a particular form of exchange—borrowing and lending. By doing this, finance lowers the cost of financing and makes it more available, facilitating investment.[33] The consequent increase in the productivity of production is more than enough to cover the cost of the finance that makes it possible.[34]

Indeed, the problem is usually too little financialization rather than too much. For example, preindustrial China failed to develop financial markets, and, as a result, capital remained far more expensive there than it was in Europe. This was a major reason for China's slowness in adopting Western industrial technology.[35]

Government. The failure of conventional theory to consider predation as an economic activity handicaps it in making sense of government. Conventional theory sees government as a benign, disembodied spirit—a sort of fairy godmother. Not surprisingly, some economists have noticed that this is a little unrealistic, and there is a considerable body of recent work that does indeed understand government in terms of predation—in particular, the work of Buchanan and Tullock, of Olson, and of their followers (see, e.g., Buchanan and Tullock 1965; Olson 1982). While this work cannot fit into the framework of conventional theory, it meshes naturally with the commerce-predation theory.

[33] This is part of the answer to my original question of why the financial system matters. Finance plays an important role not only in financing production but also in financing commerce and government. It also plays an important role not only in financing fixed capital but also in financing working capital and in providing liquidity (neither makes much sense in a world of equilibrium).

[34] Wallis and North (1986) note that, as the share of the transactions sector (including finance) increased from 24 percent of the U.S economy in 1870 to 47 percent in 1970, productivity and the total output increased enormously.

[35] For details, see https://sites.dartmouth.edu/mkohn/commpredprod (chap. 15).

Trading Costs. Trade economists have recently paid growing attention to trading costs (Anderson and Wincoop 2004). Thinking in terms of conventional theory, they see trading costs as a "friction" and focus mainly on measuring trading costs and how they affect patterns of trade. Because conventional theory assumes away commerce and predation, they are unable to explain differences in trading costs and how trading costs change over time. In the commerce-predation theory, it is commerce that reduces trading costs and predation that increases them.

Some Things Make Little Sense under the Assumption of Atomistic Individual Behavior

According to conventional theory, the social organization of production is coordinated solely by prices. Individual behavior is assumed to be atomistic, with no direct contact or coordination between individuals. In reality, however, human behavior is highly social, and it is coordinated, not only by prices but also by nonprice means such as organization, culture, and institutions.[36] Once again, many economists recognize this, and there has been considerable work in each of these areas. However, that work has been handicapped by attempts to make it consistent with conventional theory. The commerce-predation theory, recognizing that individual behavior is social, offers a much more hospitable framework.

Organization. The literature on economic organization seeks to understand why production is often coordinated directly within large enterprises rather than by prices through the market. It also explores the problems of organization that arise within and between enterprises.[37]

While this literature has added considerably to our understanding of economic organization, it has been constrained by remaining too close to conventional theory. As a result, it has generally limited itself to considering the organization of production alone—neglecting the

[36] These are all examples of social technology. While physical technology is the technology employed in manipulating the physical world—in dealing with things—social technology is the technology employed in manipulating the social world—in dealing with people. For an excellent discussion of the history of the concept of social technology and related ideas, see Langlois (2007: chap. 1).

[37] Much of this literature has developed out of the seminal work of Ronald Coase (e.g., Coase 1937, 1988). See Shirley, Wang, and Ménard (2015).

organization of commerce and government. And it has typically limited itself to considering only one structure of organization—the enterprise or firm.[38] I have already mentioned a second structure—the association—and there are yet others, such as the group and the network.[39]

Another result of relying on conventional theory is that the literature on organization has generally reasoned in terms of efficient equilibrium: the choice between firm and market, for example, is made to minimize transactions costs. But this misses other important considerations—for example adaptability and reliability. These make sense only in the context of process—of unpredictable change.[40]

Moreover, because of its adherence to equilibrium reasoning, the literature on organization is largely static. It does not consider how or why organization evolves in response to changing circumstances—in particular, to expansion of the market. And it does not consider how and why the technology of organization changes and evolves.

In general, the organization literature could be characterized as an application of conventional theory to questions of organization—an economics *of* organization. Because organization does not fit within the framework of conventional theory, the organization literature has found it difficult to explore how organization affects the working of the economy and, therefore, why it matters.

In contrast, the commerce-predation theory—as a theory of process—offers a natural framework for addressing these questions. In particular, the reorganization of production is a key component of the core process of economic evolution.

Culture. A culture is a system of shared beliefs and values that guide behavior. The idea of culture is therefore entirely alien to conventional theory: conventional theory assumes that individuals do not interact with one another directly, so there can be no shared beliefs and values.

[38] In his later years, Coase himself became interested in broadening the menu to include other forms of coordination between firms (see Coase and Wang 2011).

[39] The group is like an association, but without its formal structure—for example, the Maghribi traders (Greif 1993). A group that extends across space is a network: merchant networks were important, for example, in late Imperial China.

[40] For example, see Weitzman (1974) and Chandler (1977) on why large producers forward-integrated into commerce.

Nonetheless, some economists—particularly economic historians—have noticed that culture exists and that it certainly seems to matter for economic outcomes. Notable in this respect is the recent work of Deirdre McCloskey (2010).

In McCloskey's work, too, conventional theory has been a hindrance rather than a help. Since culture has no place in conventional theory, it has had to be treated as an exogenous factor—something outside the economy that affects economic outcomes.[41] Understanding culture in this way leads McCloskey to see cultural change as a cause—indeed, as the cause—of the "Great Enrichment."

In contrast, culture fits naturally within the framework of the commerce-predation theory. Prolonged interaction within a group leads to the evolution of a culture—with the nature of the culture depending on the context of interaction.[42] Culture, therefore, is not an exogenous factor, but rather a part of the general process of economic evolution, with different groups evolving different cultures. In particular, those engaged in the different economic activities (production, commerce, and predation) evolve cultures that are functional for those activities. Thus, the culture of those engaged in commerce is very different from the culture of those engaged in predation and the exercise of power—the culture of armies and bureaucracies (Jacobs 1992).

McCloskey notes that the beginning of the Great Enrichment coincided with a change in the elite culture from aristocratic (predatory) to "bourgeois" (commercial). She infers that this change in culture must have been the cause of the Great Enrichment. The commerce-predation theory suggests a different interpretation. The Great Enrichment happened because, in certain countries, the political obstacles to economic progress were removed. Those countries were associational states; their elites, and so their elite cultures, were commercial. In contrast, the elites of the predatory states—and thus their elite cultures— were predatory. Cultural change coincided with the Great Enrichment because it had a common origin in the rise of the associational state. Commercial culture is certainly functional in a commercial society; that is how it emerges. It also plays an essential

[41] There is a parallel here with the uneasy relationship between conventional theory and technological progress.

[42] Cultural anthropologists call this the "functionalist theory of culture" (Salzman 2001).

role in the organization of commerce. But culture is not an external cause in the way McCloskey suggests. In this respect, it is like technological progress—of vital importance to the process but endogenous to it.[43]

Institutions. As the inadequacy of the conventional theory in explaining economic progress has become increasingly obvious, many economists have turned instead to institutions as an explanation.[44] Institutions are means of social coordination "that have come to be regarded by the relevant social group as standard in the context" (Nelson and Sampat 2001: 40). For example, a particular corporation—say Microsoft—is an organization, but "the corporation" is an institution.

The work on institutions includes the work on organization and culture discussed above; it also includes the work on law and economics and on political institutions.[45] Like the work on organization and culture, the other work on institutions largely relies on conventional theory to understand its subject matter.

However, adopting the equilibrium framework of conventional theory makes it difficult to understand how institutions arise and how they affect the working of the economy. Consequently, these questions are rarely asked. And, when they are asked, the answer is typically framed in terms of the impact on the allocation of resources in production. There is, of course, no consideration of the impact on the process that generates economic progress.[46]

The commerce-predation theory is far better suited to understanding institutions, how they arise, and their role in the process. Indeed, organizations and political institutions are integral parts of the commerce-predation theory, and culture is a natural fit.

[43] "Our first methodological rule: everything that is understood as the conditions for an economic system is in fact part of it and cannot explain it. A second rule is: the specific psychological attitudes upon which an economic system rests are consequences of it and are not prior to it" (Baechler 1976: 32).

[44] See Kohn (2009) for a brief review.

[45] The former also has its origins in the work of Coase; the latter in the work of North and Olson.

[46] "It is important to note, however, that the focus in almost all of these writings has been on how prevailing institutions affect the efficiency of economic allocation and action. Technological advance hardly ever is even mentioned" (Nelson 2008: 1). See also Field (2007) and Mazzoleni and Nelson (2013).

Conclusion

The fundamental problem of economics, and of science in general, is bureaucratization. For economics, this problem has been exacerbated by deficiencies in its theoretical framework.[47]

That theoretical framework—the conventional theory—meets bureaucratic needs quite well. But because of its narrowness, in terms of both method and substance, it meets the needs of science less well. The conventional theory is, essentially, a mathematical model of the theory of value. Mathematical modeling requires simplifying assumptions that are acceptable for the theory of value but inconsistent with other areas of economics. Value theory is certainly important and can explain many economic phenomena, but there are also many it cannot explain.

Economists have had two responses to the deficiencies of the conventional theory. Those working in applied fields that do not fit the conventional theory have developed their own special theories. This work has often been handicapped, however, by attempting to make those special theories consistent with conventional theory.

The second, and more common, response has been to abandon "theory" (mathematical modeling) in favor of econometrics, "just listening to the data." But it is not possible to make sense of what the data are saying without some understanding of what is going on—that is, without an appropriate theory. The conventional theory has been of only limited help in this respect.

I have developed a theory of economic progress—the commerce-predation theory—that I believe offers a better general theoretical framework. Its modular method lends itself to incorporating other, specific, theories. And its greater breadth in terms of substance makes it useful for a wider range of empirical work.

What are the prospects that the commerce-predation theory will replace the conventional theory as a general theoretical framework for economics? Economic theorists (mathematical modelers) are unlikely to be tempted: the status quo serves them well enough, and it is a lot to ask of them to throw away the tools that define their professional status.[48]

[47] There are parallels in other areas of science. See, for example, Hossenfelder (2018) on physics and Henrich and Muthukrishna (2019) on psychology.

[48] See Epstein (2019) on how hard it is to throw away one's tools. I should emphasize that I am not saying that there is no scope for mathematical modeling within the framework of the commerce-predation theory. However, it would have to be modeling in the style, not of Newton, but, say, of Wolfram (2002).

However, applied economists who have found the conventional theory too limiting may be tempted.

Applied economists are generally closer to the real world; many work in business schools, law schools, policy institutes, and government agencies. As a result, they tend to be more pragmatic: show them that the commerce-predation theory can provide an encompassing framework for their special theory, and they may be ready to embrace it. Likewise with the majority of economists who have given up "theory" for econometric work. The replicability crisis has made them aware that good statistical work is impossible without an underlying theory. Show them that the commerce-predation theory can play this role, and they may be willing to sign on.

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