

The Engine of Capitalist Process: Entrepreneurs in Economic Theory

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Let us call a halt to this imaginary dialogue [between Karl Marx and Joseph Schumpeter] and return to the main subject at hand: the neglect of entrepreneurship in modern, mainstream economics. Surely, this neglect must give us pause? It is a scandal that nowadays students of economics can spend years in the study of the subject before hearing the term “entrepreneur,” that courses in economic development provide exhaustive lists of all the factors impeding or accelerating economic growth without mentioning the conditions under which entrepreneurship languishes or flourishes, and the learned comparisons between “socialism” and “capitalism” are virtually silent about the role of entrepreneurship under regimes of collective rather than private ownership.

—Marc Blaug (1986, 229)

Some of the simplest questions often asked about economic performance have the most complex answers. Three examples: How can profit exist? What causes economic growth? How does a market economy coordinate resource use? Over the long history of the development of economic doctrine, many great minds have wrestled with these questions and many have turned to the concept of the entrepreneur. This term has long been used by economists, albeit with varying emphases at different times, and recently enjoyed a renaissance in economic and business school pedagogy because of the Internet's evolution and the small-business explosion it generated. The concept remains relevant as America's economy enters the new millennium, for how we treat our entrepreneurs has immediate and profound effects on our overall national economic performance and the direction of economic activity.

According to modern economic theory, an entrepreneur is an individual who takes on certain tasks based solely on a perception of market opportunities and how to exploit them. This person is, to varying degrees, a risk taker, resource manager, innovator, arbitrageur, and both creator and destroyer. Entrepreneurship is not planning by groups or management decisions by corporate bodies, but the exploitation of perceived opportunity by individuals based solely on personal judgments and visions that others either don't see or can't bear the risks of acting on. It was entrepreneurs who created the New Economy. The story of who they were and how they did it is more enlightening than anything pure theory can offer on this topic.¹

But theory remains integral to understanding, and so theorists are appealing more often to the idea of entrepreneurship and the role of entrepreneurs as explanatory variables for economic reality. It is useful to look at the historical development of this concept. Only by studying the past can we expect to understand the present.

THE HISTORY OF A CONCEPT

Beginnings—The Physiocrats

Most historians of economic thought date the genesis of modern economic theory to the early eighteenth century in France, where a group of thinkers called the Physiocrats emerged. The most famous among them was Richard Cantillon (1680–1734), whose 1755 work *Essai sur la nature du commerce en general* (written between 1730 and 1734) first introduced the concept of the entrepreneur into economic analysis (Spengler 1960). The concept itself had been used before Cantillon's time, however, to mean various things. One writer has summarized its history as follows:

The most general and probably the earliest meaning of the word entrepreneur is *celui qui entreprend*, which means an active person with initiative. The word originates in the verb *entreprendre*, which has a meaning similar to “getting things done.” Up unto the sixteenth century *entrepreneur* meant: (1) grasp, take hold of (saisir) (2) surprise, discover (surprendre).²

The term seems to have evolved in the fifteenth century and was applied to people who ran risks, especially during wars. By the sixteenth century, the term was being applied to “a large scale businessman who contracted to supply, having taken upon himself the responsibility to combine the factors of production at his own expense and risk.”³ As Rothbard (1995a, 351) writes about Cantillon's analysis:

Thus Cantillon divides producers in the market economy into two classes: “hired people” who receive fixed wages, or fixed land rents, and entrepreneurs with non-fixed, uncertain returns. The farmer–entrepreneur bears the risk of fixed costs of production and of uncertain selling prices, while the merchant or manufacturer pays similar fixed costs and relies on an uncertain return. Except for

those who only sell “their own labour,” business entrepreneurs must lay out monies which, after they have done so, are “fixed” or given from their point of view. Since sales and selling prices are uncertain and not fixed, their business income becomes an uncertain residual.

Rothbard also notes that, for Cantillon, entrepreneurs are equilibrating agents in the market system. This is in contrast to the analyses of some economists, especially Joseph Schumpeter, who later came to view entrepreneurs as disequilibrating factors.

Immediately after the publication and wide dissemination of Cantillon's work—one of the few works Adam Smith (1723–90) cites in his magisterial *An Inquiry Into the Nature and Causes of the Wealth of Nations*—a self-conscious school of thought arose named “physiocracy,” or rule by nature. Although Cantillon's *Essai* came first, the leader of this initial well-organized economic paradigm was not Cantillon but François Quesnay (1694–1774). The Physiocrats flourished for two decades before Smith published his classic work in political economy in 1776. Like many early political economists, Quesnay, a medical physician to the French court by vocation, studied and wrote about economics as an avocation.⁴

Quesnay's views about entrepreneurs resembled Cantillon's. Because of the physiocratic focus on the agricultural sector, Quesnay and his followers were referring to the land-owning entrepreneurs who guided food production when they argued that “the entrepreneur bears uncertainty, organizes and supervises production, introduces new methods and new products, and searches for new markets. In order to do this properly, he must gain free access to a wide variety of markets, and he must be able to rely on the government to provide for him the utmost freedom of action in his undertakings” (Hoselitz 1962, 247). The Physiocrats lived in an age dominated by agriculturally based economies, the Industrial Revolution's effects having only begun to transform the world economic landscape.

The later French political economists improved upon Cantillon's analysis of entrepreneurial behavior by adding what he had omitted, specifically the relationship between entrepreneurs and the sources of capital available for economic innovation. For Cantillon, the entrepreneur is simply a risk taker under conditions of uncertainty, but for the Physiocrats, and especially for the partial Physiocrat Anne-Robert-

Jacques Turgot (1727–81), the risks he takes are often borne out of his own stock of capital.⁵ This view made sense in a period when financial markets were crude and institutionally provided capital was rare.

The French political economist Jean-Baptiste Say (1767–1832) has been falsely credited as the first to discuss the entrepreneur's role in economic theory.⁶ To be fair to Say, there is no direct, irrefutable evidence that he appropriated the ideas of those political economists who preceded him in France, although some historical speculation exists (Hoselitz 1962, 248–50). What is not historically disputed is that the French tradition had a more fully developed and more sophisticated theory of entrepreneurial activity than did the British classical counterpart. And that meant, by logical extension and ex post empirical confirmations, that the French also better understood how a capitalist economic system actually functions. Unfortunately, because of the international dominance of British writers and thinkers during the nineteenth century, much of this knowledge lay dormant, awaiting rediscovery and elaboration.

The Classical School (1776–1870)

“Entrepreneurs” virtually disappeared from nineteenth century British political economy. Adam Smith set the precedent with his hugely influential *An Inquiry into the Nature and Causes of the Wealth of Nations*, considered the fountainhead of the entire British classical school of political economy.⁷ Did this mean Smith was unaware of the role entrepreneurs played or that he merely lacked a term for them? Some have claimed that Smith's view of the “undertaker” was nothing more than the physiocratic entrepreneurial model in English terminology (Elkjaer 1991, 806–7). Others deny that Smith understood or used the entrepreneur concept at all (Rothbard 1995b, 25). Smith's defenders claim that, for British classical political economy, production was a given, and, therefore, the roles of individual productive factors needed no elaboration. But this won't do, because Smith and his successors did discuss the factors of production and their rates of remuneration in great detail, all the while excluding any separate role for the entrepreneur, whose title was replaced by the all-encompassing term “capitalist” and whose function became automatic. Schumpeter (1950, 556) is well worth quoting here:

Ricardo, the Ricardians, and also Senior took indeed no notice of Say's suggestion and in fact almost accom-

plished what I have described as an impossible feat, namely, the exclusion of the figure of the entrepreneur completely. For them—as well as for Marx—the business process runs substantially by itself, the one thing needed to make it run being an adequate supply of capital.

David Ricardo (1772–1823) and his followers ought to have built on the early French insights but didn't, even though Say's extensions were available to them in a translated edition for more than a decade before Ricardo wrote his *Principles of Political Economy* (Hebert and Link 1988).⁸ Karl Marx (1818–83) ignored entrepreneurs altogether because they didn't fit in well with his division of all economic reality into the bourgeoisie and the proletariat, the “capitalists” and the “workers.” This seems an especially large oversight for the man who, according to Blaug (1997), introduced the concept “technological change” into economic theory, because entrepreneurs are almost always linked with technical change, and Marx had the benefit of seeing many such entrepreneurial fortunes built on innovative ideas (see Schumpeter 1968, 516).

The only classical school economist who wrote anything detailed about entrepreneurs was Jeremy Bentham (1748–1832). Bentham disagreed with Smith about usury (*Defence of Usury*, 1787), believing that charging interest on loans was a key part of the innovative process that entrepreneurs continually create. Except for this one dissent, the British classical school remained mostly mute on the topic of entrepreneurship between the time of Smith's early and narrow writings and John Stuart Mill's later, somewhat ambiguous ones.⁹

Mill (1806–73), arguably the greatest of the classical economists and the school's last major figure, devoted—in a two-volume, 1,000-plus-page work—but two sentences to the entrepreneur, illustrating the British classical school's final stance on the issue of what entrepreneurs do and what rewards they might receive:

These different compensations may be paid to either the same, or to different persons. The capital, or some part of it, may be borrowed: may belong to someone who does not undertake the risks or the trouble of the business. In that case, the lender or owner is the person who practices the abstinence; and is remunerated for it by the interest paid to

him, while the difference between the interest and the gross profits remunerates the exertions and risks of the undertaker.¹⁰

Because classical economists made little of the distinction between entrepreneurs—who assume risks, combine productive factors, and explore the possibilities of innovation—and capitalists—who merely provide the means for investment in machines and processes—the early physiocratic insights and extensions of Say were mostly ignored during the classical period in England.

Other Nineteenth Century Economic Thinkers

Austria, Sweden, and Germany produced many influential, brilliant, and widely read economic theoreticians during the nineteenth century. Building on the early insights of the Physiocrats, these thinkers made significant advances in the theory of the entrepreneur. Some of the German contributions were made by J. H. von Thunen (1783–1850), H. K. von Mangoldt (1824–68), Gottlieb Hufeland (1760–1817), and Adolf Riedel (1809–72). Riedel embellished Cantillon's view of the entrepreneur, adding the insight that entrepreneurs reduce uncertainty for others by taking it on themselves in the form of fixed-price contracts over time. If they guess right, they enjoy a surplus or profit; if not, they suffer a loss. Thunen extended the distinction between entrepreneurial activity and mere managerial activity and also brought together the two views of the entrepreneur in the process. Were they risk takers/bearers or innovators, or both? Thunen argued that they were both.

Mangoldt brought the element of time into the equation of risk bearing. In his view, the longer the productive process, the more uncertain and, hence, riskier would be the entrepreneur's function. Although this seems obvious, the inclusion of time in economic theory came slowly. Mangoldt anticipated Frank Knight's later distinction between risk and uncertainty. Thunen, in his *The Isolated State* (1850), put forward exactly this idea in explaining the rewards that accrue to entrepreneurs. To quote Blaug (1986, 222):

The rewards of the entrepreneur, Thunen went on to say, are therefore the returns for incurring those risks which no insurance company will cover because they are unpredictable. Since novel action is precisely the condition under

which it is impossible to predict the probability of gain or loss, the entrepreneur is “explorer and inventor” in his field *par excellence* (Hebert and Link, 1988, 45–47).

The classical school came to an end with the so-called marginal revolution of the early 1870s, and its central doctrines became known thereafter as neoclassicism (see, for example, Blaug 1986). During this period, roughly 1880–1910, British and Austrian theoretical output dominated the economics profession by way of such teachers or writers as Alfred Marshall (1842–1924), A. C. Pigou (1877–1959), Carl Menger (1840–1921), and Friedrich von Wieser (1851–1926). Also important, if not immediately appreciated, were France's Leon Walras (1834–1910) and Sweden's Knut Wicksell (1851–1926). These thinkers addressed numerous issues but didn't, for the most part, include any extensions of the theory of entrepreneurship, although they drew upon previous work and did discuss the issues surrounding entrepreneurship extensively (see Wieser 1967, 353–58).

BREAKING NEW GROUND

The economist most closely associated with the term entrepreneur is, paradoxically, the theorist who prophesied the entrepreneur's obsolescence. Joseph Schumpeter (1883–1950), with his evocative phrase “creative destruction,” gave the most sophisticated explanation of the concept.¹¹ Schumpeter was specific in arguing that the entrepreneur doesn't invent things, but exploits in novel ways what has already been invented. In combining existing inventions, the entrepreneur triggers creative destruction and brings into being new industries even as old ones are sometimes destroyed. Nor is Schumpeter's entrepreneur a risk bearer, for that role is played, in his view, by the financial intermediary who lends the funds for the new combination. Entrepreneurs then, are managers, deciding how resources will be used in a capitalist economy. They also are destabilizing agents because they change the existing relations and techniques of production. They lead the economy toward a better use of capital and knowledge, which is vital for macroeconomic growth and rising productivity.

Finally, Schumpeter's entrepreneurs are the causes of business cycles because their actions create dislocations that can come in waves. Cyclic downturns are characterized by

what Ludwig von Mises (1881–1973) called a “cluster of errors,” as most entrepreneurs suddenly guess wrong. Why? Schumpeter suggests three reasons: (1) innovative ways of applying existing inventions and resources immediately trigger emulation by others; (2) the extra demand that financial backing gives to these undertakings is financed by credit-expanding activities that banks can engage in under a fractional reserve system; (3) the new undertakings generate “spillover effects” and trigger similar dislocations in other industries (Schohl 1999).

Schumpeter emerged from the Austrian tradition, and his business cycle theory as well as his ideas about entrepreneurs were influenced by previous work in that tradition. For example, it was Austrian school founder Menger who first elaborated that paradigm’s view of entrepreneurs. According to Menger, entrepreneurs acquire information, make economic calculations, supervise production, and bear risks due to the uncertainty inherent in all human undertakings. But surprisingly, he held that the risk bearing aspect of entrepreneurship is trivial because of the possibility of profits. Like Menger, Schumpeter denied that entrepreneurship was primarily about risk taking (Hebert and Link 1988).

Another Austrian, Wieser, added a characteristic to entrepreneurs: alertness to the opportunities that surround them. Austrian school theorist Israel Kirzner later extended this view of entrepreneurs, whereas Schumpeter pursued Menger’s approach. This early work and its later extension make the Austrians the second organized economic school—after the Physiocrats—to work out extensive ideas about entrepreneurs and their effects on the economy and society.

France’s Walras seems the least likely to include entrepreneurship prominently in his models. After all, Walras was the creator of the modern general equilibrium system—a pillar of neoclassical economics—which states that equilibrium is reached by the efforts of an apocryphal “auctioneer.” Yet Walras allowed a crucial role for the entrepreneur as one of the major factors of production, and he was careful to distinguish the entrepreneur’s function from the capitalist’s. Further, in a disagreement with his French predecessors, Walras denied that arranging production was entrepreneurial; it was merely, in his view, managerial and was remunerated with wages, not profits. Walras had well-developed views about the role of entrepreneurs in the real world, even though they disappeared in the general equilibrium construct that emerged from his theoretical approach.

The British tradition during this time con-

tinued to place little emphasis on the entrepreneur, dominated as it was by Marshall and Pigou. This tendency continued with their pupil, John Maynard Keynes (1883–1946), in whose writings entrepreneurs play no major role whatsoever. In fact, Keynes (1964, 162) reduces entrepreneurial activities to the alleged “animal spirits” that drive certain people to seek profit, a contention that adds nothing to the economic insights of his predecessors.¹²

Intellectual intercourse in the late nineteenth and early twentieth centuries flowed in one direction: from Europe, and especially Germany, to America. This was unfortunate because many American economists had made advances in the theory of entrepreneurship from which their European counterparts might have profited. Among them were Amasa Walker (1799–1875), Francis Walker (1840–97), John Bates Clark (1847–1938), Frank Taussig (1859–1940), Herbert Davenport (1861–1931), and Frank Knight (1885–1972). Not since the Physiocrats had so much work been done on the topic of entrepreneurship, especially as it relates to entrepreneurs bearing risk and uncertainty. These writers also extensively explored whether entrepreneurs and capitalists are identical or whether they perform separate functions in the economy.

Davenport in particular made some interesting contentions, extending Cantillon’s belief that entrepreneurs bear risk because they don’t know what output can be sold for, nor even what their future input costs might be. Further, Davenport contended that entrepreneurs are the engine of capitalist production and, for that reason, economics ought to be the study of what they do (Hebert and Link 1988).

Davenport, like Clark and others before them, denied that profit is a return to risk bearing, arguing instead that profits are just a form of entrepreneurial wages paid for the specific managerial/visionary attributes of entrepreneurs. Davenport’s entrepreneurs are not like Schumpeter’s innovators who are busy transforming the economic landscape through creative destruction. They are equilibrators, the restorers of equilibrium, rather than disequilibrators; hence, Davenport anticipates Kirzner’s (1973) arguments.

Knight, in his famous 1921 work *Risk, Uncertainty and Profit*, succeeded in carefully delineating the modern contours of the theory of the entrepreneur. Knight’s distinction between risk and uncertainty has since been expanded, but his work was pioneering, nonetheless, and extended Cantillon’s basic insight

about the economic risk bearing (now called uncertainty) that is one of the entrepreneur's primary functions in the economy (Knight 1971, 270–90). Knight's view of this aspect of entrepreneurial function and its reward—profit, as he defined it—is summed up succinctly in the following passage:

Profit arises out of the inherent, absolute unpredictability of things, out of the sheer brute fact that the results of human activity cannot be anticipated and then only insofar as even a probability calculation in regard to them is impossible and meaningless. The receipt of profit in a particular case may be argued to be the result of superior judgment. But it is judgment of judgment, especially one's own judgment, and in an individual case there is no way of telling good judgment from luck, and a succession of cases sufficient to evaluate the judgment or determine its probable value transforms the profit into a wage.¹⁵

Entrepreneurs receive their profits from what we call uncertainty. It can't be insured against as risk can because it is inherently unknowable. And the public policy implication of this type of uncertainty is important, as F. A. Hayek (1969, 203) was to point out: "To assume that it is possible to create conditions of full competition without making those who are responsible for the decisions pay for their mistakes seems to be pure illusion." In brief, entrepreneurs are rewarded by markets when they are right and show superior judgment, but punished when they are wrong, a process that rearranges resources continuously in search of greater use efficiency.

CONTRIBUTIONS SINCE SCHUMPETER

The middle twentieth century saw little extension of existing ideas about entrepreneurs and entrepreneurship, perhaps because of a belief that Schumpeter had said it all. But one significant development, "the socialist calculation debate," merits attention because it revolved around the entrepreneur as the central driving force of capitalist process (Hayek 1975, Lavoie 1985).

Sparking the debate was a Mises article (along with one the same year by the famous sociologist Max Weber) that suggested socialism wouldn't work in practice because, absent a market for capital, socialist planners wouldn't

be able to value inputs or outputs rationally (Mises 1975). As much methodological as ideological, the diverse positions helped clarify many unexamined assumptions and issues in then-current economic theory. Schumpeter, who had already decided that socialism lay at the end of the capitalist development road because capitalism's successes create its own eventual downfall, opposed Mises, as did Fred Taylor, Abba Lerner, and Oscar Lange. Mises' argument was picked up and extended by his close associate F. A. Hayek (1899–1992). The debate produced two competing views of economics and human society in which the role and function of entrepreneurs had never been more visible, central, or important. Several variants of entrepreneurship theory also emerged from this clash, including the one stressed and developed by Austrians and their sympathizers, such as Hayek himself, Murray Rothbard (1926–93), G. L. S. Shackle (1903–92), Ludwig Lachmann (1906–90), and Israel Kirzner (1930–).

Fundamental to the clash between the pro- and antisocialist planning protagonists was the issue of equilibrium and how an economy solves the problem of matching rational, cost-minimizing production of goods and services with consumer preferences. For the proplanning writers, the solution was simple: formulating a system of equations and then solving them, taking existing preferences and prices as given data (Lange 1964; but see also Schumpeter 1968, 989, and Hayek 1975, Appendix A). Entrepreneurs aren't necessary in this model of how to determine an economy's output. Not surprisingly, the Austrians took the lead in picking apart the implications of the proplanning approach and began to create a model of the capitalist economy as an ongoing process of discovery, such discoveries being the daily by-product of entrepreneurial activity (Kirzner 1992). As Holcombe (1988) writes:

These activities [research and development] can augment factors of production, but by themselves do not provide the insights that lead to new goods and services, or new processes for producing existing goods and services. If this seems like an overly fine distinction, consider the policy implications. Centrally planned economies tried unsuccessfully for decades to produce growth through investment in research and education, but were missing the institutions that enabled entrepreneurship.

It is entrepreneurs—dispersed, alert and making use of decentralized information—who coordinate economic activity, bring new processes to fruition, combine labor and capital in new or proven ways, and create their individual pieces out of which the economy’s overall, aggregate direction emerges.¹⁴ There is another important but often overlooked advantage to having decentralized entrepreneurs control the economy’s overall direction. Decentralized decisions minimize the harm poor choices can do to the entire economy. Central planning has no such advantage. When the national planners are wrong, the entire economy suffers.

WHAT IS THIS THING CALLED EQUILIBRIUM?

For many writers, the socialist planning debate, as well as the history of the theory of entrepreneurship, depended on the definition of equilibrium, a much-used but often insufficiently defined concept. What precisely does the term mean, and why does it impact various theories so much? (See Kirzner 2000, chapter 13.)

Palgrave’s definition stresses the Austrian contention about the correctness of market participants’ plans:

Economic equilibrium, at least as the term has traditionally been used, has always implied an outcome, typically from the application of some inputs, that conforms to the *expectations of the participants in the economy*. Many theorists, especially those employing the “economic man” postulate, have also required the further condition for equilibrium that every participant be optimizing in relation to those correct expectations. However, it is the former condition, *correct expectations*, that appears to be the essential property of equilibrium at least in the orthodox use of the term. (Eatwell, Milgate, and Newman 1987, 177) [Emphasis added]

Thus, we have a contrast between physical equilibria in an at-rest position, as in a pendulum at rest, and the expectational equilibria in economics that don’t imply rest at all, but a process of fulfilled expectations. This view also implies that equilibrium is something the economy has a tendency to move toward, like “the centre of gravitation of the economic system—it is that configuration of values towards which all economic magnitudes are continually tending to conform” (Eatwell, Milgate and Newman

1987, 179). Does it matter whether we view entrepreneurs as disrupting pre-existing equilibria or as creating new equilibria?¹⁵ It doesn’t, so long as we remember that the concept of general equilibrium is purely theoretical, has never existed and will never exist. Whether there is, in fact, a tendency toward general equilibrium is a discussion beyond the scope of this article. In the physical world, an existing “state of affairs” can be disrupted by entrepreneurial activities even as other entrepreneurs act so as to better coordinate the interrelationships between inventors, producers, financiers, and consumers that the initial disruption created, thus triggering a process that ends in a new and different state of affairs and so on. Therefore, the differing entrepreneurial definitions of equilibrium are reconcilable if we view the concepts “equilibrating” and “disequilibrating” as variations on the central theme of market process rather than as diametrically opposed absolutes.

WHAT ABOUT PUBLIC POLICY AND ENTREPRENEURS?

Understanding the development of the concept of entrepreneurship helps us to better understand our economy and the policy choices that are consistent with maximizing the benefits we derive from the work done by entrepreneurs. This is especially true during periods of upheaval and transition, when the old formulas and measurement devices are called into question because the very nature of what is being measured is changing or has already changed. The current controversies over such empirical issues as measuring productivity, explaining widely divergent and sometimes surprising growth rates, and setting the speed at which the economy can grow without triggering inflation are all dependent in many intricate ways on what entrepreneurs are doing in—and to—the economy. As Greenspan (2000) noted in congressional testimony:

As the U.S. economy enters a new century as well as a new year, the time is opportune to reflect on the basic characteristics of our economic system that have brought about our success in recent years. Competitive and open markets, the rule of law, fiscal discipline, and *a culture of enterprise and entrepreneurship* should continue to undergird rapid innovation and enhanced productivity that in turn should foster a sustained further rise in living standards. [Emphasis added]

A Useful Taxonomy of Entrepreneurial Ideas

Concept	Agreeing	Disagreeing
Risk bearing	Cantillon, Say, Knight (Mises, Menger, Shackle)	Schumpeter, Kirzner
Capital owning	Physiocrats, Smith (Turgot, Mises)	Walras, Clark, Schumpeter, Kirzner
Exceptional people	Say, Mill, Marshall (Shackle)	Kirzner
Leaders	Marshall	Schumpeter, Walras, Clark
Combiner of factors, but not a leader	Walras, Clark	Marshall, Say, Mill
Creates equilibrium	Walras, Clark (Shultz)	Schumpeter
Creates disequilibrium	Schumpeter (Shackle)	Walras, Clark
Innovative	Schumpeter (Thunen, Weber)	Say
More alert	Cantillon, Clark, Kirzner (Menger)	Physiocrats

SOURCE: Based on Elkjaer (1991), with author's additions in parentheses.

In the New Economy—with the always evolving microprocessor and its myriad applications, biotech, and nanotechnologic possibilities—the seemingly simple concepts “input” and “output” are no longer simple. The Old Economy definitions are changing as these new technologies transform how we produce things. During an entrepreneurially driven, transformational time—and some economists argue that this is just such a time—our theories and measurements might undergo a period of Kuhnian “anomaly.” If so, we could find our theories transformed by “extraordinary science,” and the claims for change that at first are resisted and attacked might ultimately become a new status quo.¹⁶

The logical conclusion from this exploration is that an entrepreneur is an ingenious, risk taking innovator who might also be an imaginative manager and whose actions both disrupt and coordinate our market economy. We can, of course, limit the scope of entrepreneurial activity in any economy. But we do so only by bearing the social costs of less innovation, slower growth, and curtailment of our economic freedom. This is always the primary regulatory trade-off—that regulations raise costs, tend to entrench existing technologies at the expense of newer ones, and raise legal barriers to entry by entrepreneurs wishing to compete in those markets. Thus, we would do well to heed the arguments of the writers surveyed in this article concerning entrepreneurs and their vital role as not only the engine of capitalist process, but of capitalist *progress* as well.

Several of the contentions explored above were forcefully stated by former U.S. Treasury Secretary Lawrence Summers (Henig 2000):

What evolution teaches you is that improvements in innovation come in many different forms. That evolution is an invisible-hand process rather than a guiding-hand process. So it inclines one toward a set of public policies that support a very dynamic and competitive economy with a lot of different people trying to do a lot of different things, rather than an approach of trying to have people in an office figuring out what's right and laying out a blueprint for the future.

The essence of the Newtonian system was that you could predict where Saturn would be in A.D. 3800. The essence of a Darwinian system is that you can't make the same kind of predictions. And I think that imparts a certain humility to government as we make eco-

omic policy. On the one hand, it inclines us toward deregulation, and on the other hand, it teaches us that the broadest environment is the best parameter in which evolution is allowed to operate....It's not an accident that Silicon Valley happened in the United States rather than someplace else, it's a reflection of American public policy.

In the very competitive, global marketplace, nations that forget how their entrepreneurs contribute to technological change, productivity, resource efficiencies, and economic growth do so at a potentially high cost (Drozdiak 2001).

NOTES

The author thanks Mark Wynne, Jim Dolmas, Jason Saving, Harvey Rosenblum, Steve Brown, Erwan Quintin, and Evan Koenig for their helpful comments.

- Wolfe's (2000, 17–65) essay “Two Young Men Who Went West” captures, in a way that theory could never duplicate, the combination of chance, motive, attitude, and ability that created Silicon Valley and is a consistently fascinating examination of America's remarkable predilection for creating and nurturing entrepreneurs.
- Elkjaer (1991, 805), quoting Bloch and Wartburg (1950). An even more detailed analysis of the linguistic origins of the term entrepreneur and its use pre-Cantillon is given by Hoselitz (1962).
- Elkjaer (1991, 805), quoting Helene Verin.
- Numerous others considered the new science an

avocation, including Dupuit, Turgot, Smith, Ricardo, Malthus, and Jevons.

- ⁵ Rothbard 1995a, 395. "Cantillon's theory...had failed in one key element: an analysis of capital and the realization that the major driving force is not just any entrepreneur but the *capitalist*-entrepreneur, the man who combines both functions."
- ⁶ This was due, in part, to Charles Gide and Charles Rist's influential *A History of Economic Doctrines*, first published in 1915. Hoselitz (1962, 234) states that it was not until the seventh edition of Gide and Rist's book that they finally gave credit to the Physiocrats and Cantillon, thus changing the claim that this concept had never before appeared in the economics literature. But the sixth printing, cited in this article (Gide and Rist 1927), does not credit Say with authorship of this key economic concept either. Gide and Rist surely were familiar with the history of development of French political economy, making the error all the more inexplicable.
- ⁷ The Liberty Press reissue of the 1976 Oxford edition of *The Wealth of Nations* (Smith 1981) contains no index entry for the term entrepreneur. Smith's reputation among economists has had its highs and lows. Since the bicentennial of his *magnum opus* in 1976, his reputation has been rising once again, having survived much criticism. See, for example, Schumpeter's strong criticisms of "A. Smith" in his *History of Economic Analysis*.
- ⁸ If Ricardo had questions about Say's views, he could have had them answered authoritatively, since the two men carried on a correspondence. But the word "entrepreneur" appears nowhere in that correspondence.
- ⁹ Not everyone agrees that the British classical economists, for the most part, ignored entrepreneurship. See Machovec (1995), chapters 4, 5, and 6.
- ¹⁰ Mill (1976, 406). Mill clearly meant "entrepreneur" in this passage, even footnoting it and lamenting that, in French, it was better stated, although he still used the more familiar English term "undertaker."
- ¹¹ Schumpeter's definition of entrepreneurs and their activities is mostly found in his *Theory of Economic Development* (1961), although it is restated in his *Capitalism, Socialism, and Democracy* (1950, 132–33). See also Mises (1963, 559–63) for a discussion on entrepreneurial errors. Schumpeter's vision of creation on the remnants of destruction was not new. The American economist David A. Wells' 1889 book, *Recent Economic Changes*, argued the same theme but without the catchy phrase "creative destruction" and without discussing in depth its implications, as Schumpeter did. See Perelman (1995).
- ¹² Not all British economists ignored the role of entrepreneurs. See Wicksteed (1967, 367–71).
- ¹³ Knight (1971, 311). This distinction is related to Mises' discussion of case and class probabilities and insurance. See Mises (1963, 107–15). However, Mises had

an especially difficult theory of the entrepreneur, and space does not permit a detailed examination of the differences between that conception and the general use of the term. See, however, Gunning (2001).

- ¹⁴ It seems difficult to believe that, between 1936 and 1945, Hayek published three short essays that revealed just how confused the economics profession was about this constellation of important issues, but see his *Individualism and Economic Order* (1969), chapters 2, 3, and 4.
- ¹⁵ Lewin's (1999) discussion of this issue in the first three chapters of *Capital in Disequilibrium*, and many other aspects of the historical disagreements about what equilibrium has meant to various theorists, is well worth consulting.
- ¹⁶ After Kuhn's (1962) knowledge model as put forth in *The Structure of Scientific Revolutions*.

REFERENCES

- Blaug, Marc (1986), *Economic History and the History of Economics* (New York: NYU Press).
- (1997), *Economic Theory in Retrospect*, 5th ed. (Cambridge: Cambridge University Press).
- Bloch, Oscar, and W. von Wartburg, eds. (1950), *Dictionnaire étymologique de la langue française* (Paris: Presses universitaires de la France).
- Drozdiak, William (2001), "Old World, New Economy: Technology, Entrepreneurship Are Transforming Europe," *Washington Post*, February 18, H1.
- Eatwell, John, Murray Milgate, and Peter Newman, eds. (1987), *The New Palgrave: A Dictionary of Economics* (New York: The Stockton Press), vol. 2.
- Elkjaer, Joergen R. (1991), "The Entrepreneur in Economic Theory: An Example of the Development and Influence of a Concept," in *History of European Ideas* 13 (6): 805–15.
- Gide, Charles, and Charles Rist (1927), *A History of Economic Doctrines*, 6th ed. (London: Harrap and Co.).
- Greenspan, Alan (2000), "Testimony Before the Committee on Banking and Financial Services, U.S. House of Representatives," www.federalreserve.gov/boarddocs/hh/2000/february/testimony.htm, February 17.
- Gunning, J. Patrick (2001), "The Praxeological Entrepreneur," January 16, www.fortunecity.com/meltingpot/barclay/212/subjecti/workpape/praxent.htm.
- Hayek, F. A. (1969), *Individualism and Economic Order* (Chicago: University of Chicago Press), orig. pub. 1948.

- , ed. (1975), *Collectivist Economic Planning* (Clifton, N.J.: Augustus Kelley), orig. pub. 1935.
- Hebert, Robert, and Alfred Link (1988), *The Entrepreneur: Mainstream Views and Radical Critiques*, 2nd ed. (Westport, Conn.: Greenwood Publishing Group).
- Henig, Peter D. (2000), "Charles Darwin Meets Adam Smith," *Red Herring*, September 1, http://www.redherring.com/story_redirect.asp?layout=story_generic&doc_id=RH920013692&channel=70000007.
- Holcombe, Randall G. (1988), "Entrepreneurship and Economic Growth," *Quarterly Journal of Austrian Economics* 1 (Summer): 45–62.
- Hoselitz, Bert F. (1962), "The Early History of Entrepreneurial Theory," in *Essays in Economic Thought: Aristotle to Marshall*, ed. J. J. Spengler and W. R. Allen, 2nd ed. (Chicago: Rand McNally), 234–58.
- Keynes, John Maynard (1964), *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace, and World), orig. pub. 1936.
- Kirzner, Israel (1973), *Competition and Entrepreneurship* (Chicago: University of Chicago Press).
- (1992), *The Meaning of Market Process* (New York: Routledge).
- (2000), *The Driving Force of the Market* (New York: Routledge).
- Knight, Frank (1971), *Risk, Uncertainty and Profit* (Chicago: University of Chicago Press), orig. pub. 1921.
- Kuhn, Thomas (1962), *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press).
- Lange, Oskar (1964), *On the Economic Theory of Socialism* (New York: McGraw-Hill), orig. pub. 1938.
- Lavoie, Don (1985), *National Economic Planning: What Is Left?* (Washington, D.C.: Cato Institute).
- Lewin, Peter (1999), *Capital in Disequilibrium* (New York: Routledge).
- Machovec, Frank M. (1995), *Perfect Competition and the Transformation of Economics* (New York: Routledge).
- Mill, John Stuart (1976), *Principles of Political Economy* (Fairfield, N.J.: Augustus Kelley), orig. pub. 1848.
- Mises, Ludwig von (1963), *Human Action* (Chicago: Regnery), orig. pub. 1949.
- (1975), "Economic Calculation in the Socialist Commonwealth," in *Collectivist Economic Planning*, ed. F. A. Hayek (Clifton, N.J.: Augustus Kelley), 87–130, orig. pub. 1935.
- Perelman, Michael (1995), "Schumpeter, David Wells, and Creative Destruction," *Journal of Economic Perspectives* 9 (Summer): 189–97.
- Rothbard, Murray (1995a), *Economic Thought Before Adam Smith: An Austrian Perspective on the History of Economic Thought*, vol. 1 (Hants, U.K.: Edward Elgar).
- (1995b), *Classical Economics: An Austrian Perspective on the History of Economic Thought*, vol. 2 (Hants, U.K.: Edward Elgar).
- Schohl, Frank (1999), "A Schumpeterian Heterogenous Agent Model of the Business Cycle," in *Quarterly Journal of Austrian Economics* 2 (Spring): 1–20.
- Schumpeter, Joseph (1950), *Capitalism, Socialism, and Democracy* (New York: Harper Collins), orig. pub. 1942.
- (1961), *Theory of Economic Developments* (New York: Oxford University Press), orig. pub. 1912.
- (1968), *History of Economic Analysis* (New York: Oxford University Press), orig. pub. 1954.
- Smith, Adam (1981), *An Inquiry Into the Nature and Causes of the Wealth of Nations* (Indianapolis, Ind.: Liberty Fund), orig. pub. 1776.
- Spengler, Joseph J. (1960), "Richard Cantillon: First of the Moderns," in *Essays in Economic Thought: Aristotle to Marshall*, ed. J. J. Spengler and W. R. Allen, 2nd ed. (Chicago: Rand McNally), 105–40.
- Wicksteed, Philip H. (1967), *The Common Sense of Political Economy*, vol. 1. (New York: Augustus Kelley), orig. pub. 1913.
- Wieser, Friedrich von (1967), *Social Economics* (New York: Augustus Kelley), orig. pub. 1914.
- Wolfe, Tom (2000), *Hooking Up* (New York: Farrar, Straus, Giroux).

Mark Casson's economic theory laid the foundation of modern entrepreneurship theories. Joseph Schumpeter introduced the innovation theory of entrepreneurship, Israel Kirzner considered spontaneous learning and alertness two major characteristics of entrepreneurship, Harvey Leibenstein considered entrepreneurs as gap-fillers, and Peter Drucker held entrepreneurship dependent on innovation, resources, and an entrepreneurial behavior. He adopts the theory of early economists such as Richard Cantillon and J B Say, and adds the dimension of risk-taking. Entrepreneur paying back the capitalist, including interest, and retaining the "pure entrepreneurial profit." Leibenstein's Theory of Entrepreneurship. Entrepreneurial economics is the study of the entrepreneur and entrepreneurship within the economy. The accumulation of factors of production per se does not explain economic development. They are necessary factors of production, but they are not sufficient for economic growth. Human creativity and productive entrepreneurship are needed to combine these inputs in profitable ways, and an institutional environment that encourages productive entrepreneurship becomes the ultimate determinant of economic