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Abstract

The English-language literature of technological change is one of the few areas of economic writing in which Joseph Schumpeter has maintained a following and in which he has been accorded some modicum of the attention he deserves. There has grown up within this literature a standard interpretation of Schumpeter's famous assertion that progress will eventually come to be 'mechanized'. The conventional wisdom goes something like this. The argument in Schumpeter's early writings by which writers invariably mean the 1934 English translation of *The Theory of Economic Development* – is really quite different from that in *Capitalism, Socialism, and Democracy*. There are, in effect, two Schumpeters: an 'early' Schumpeter and a 'later' Schumpeter. It was the former who believed in the importance of bold entrepreneurs, while the latter envisaged their demise and replacement by a bureaucratized mode of economic organization. Moreover, the reason Schumpeter changed his views is that he was reacting to the historical development of capitalism as he saw it taking place around him. As he moved from the world of owner-managed firms in early twentieth-century Europe to the world of large American corporations in the 1930s and 1940s, his opinions changed appropriately. ¶ The paper attempts to make two points. The first is that, as a doctrinal matter, the 'two Schumpeters' thesis, as it is understood in the Anglo-American literature on technological change, is clearly wrong. Equally wrong is the idea that the fundamentals of Schumpeter's thought on entrepreneurship were influenced importantly by any observation of large firms in the United States after 1931. Schumpeter's ideas were remarkably consistent from at least 1926 (five years before he came to the U. S.) until his death. The obsolescence thesis speaks to a distinction between early capitalism and later capitalism, perhaps, but not to an earlier and later Schumpeter. The second, and more important, point is that the obsolescence thesis is wrong. It rests on a confusion – or perhaps a bait-and-switch – between two quite different kinds of economic knowledge.

I.

From relative obscurity, the name of Joseph Schumpeter has leapt to prominence in recent years. In part, this reflects the blossoming of entrepreneurial studies as a distinct field of research¹ (Shane and Venkataraman 2000). Schumpeter's famous discussion of the role of bold entrepreneurs in creating new combinations and redirecting the means of production into new channels is an important founding stone for any study of entrepreneurship. During the three or so decades after Schumpeter's death in 1950, however, a quite different set of Schumpeterian ideas had entered public consciousness, largely through the popular writings of John Kenneth Galbraith (1967). Far from exalting the role of individual initiative in economic change, this literature foretold – or even claimed to be chronicling – the *demise* of the entrepreneur. Innovation would become – or even *had* become – a matter of routine in the large bureaucratic corporation. Perhaps astoundingly, these two seemingly incompatible sets of ideas do both emanate from Schumpeter.

The Anglo-American literature of technological change is one of the few areas of economic writing in which Schumpeter maintained a following and in which he has long been accorded some modicum of the attention he deserves. This literature was quite naturally forced to deal with the problem of the obsolescence thesis and its relationship to the theory of (individual)

entrepreneurship. The result has been a standard interpretation of the mechanization-of-progress thesis that has become an unexamined conventional wisdom. It goes something like this. The argument in Schumpeter's early writings is really quite different from that in his later work. There are, in effect, two Schumpeters: an "early" Schumpeter and a "later" Schumpeter. It was the former who believed in the importance of bold entrepreneurs, while the latter envisaged their demise and replacement by a new mode of economic organization. Moreover, the reason Schumpeter changed his views is that he was reacting to the historical development of capitalism as he saw it taking place around him. As he moved from the world of owner-managed firms in turn-of-the-century Vienna to the world of large American corporations in the 1930s and 1940s, his opinions changed appropriately.

The paper attempts to make two points. The first is that, as a doctrinal matter, the "two Schumpeters" thesis, as it is understood in the Anglo-American literature on technological change, is clearly wrong. Equally wrong is the idea that the fundamentals of Schumpeter's thought on entrepreneurship was influenced by any observation of large firms in the United States after 1931. Schumpeter's ideas were remarkably consistent from at least 1928 (three years before he came to the U. S.) until his death. The obsolescence thesis speaks to a distinction between early capitalism and later capitalism, perhaps, but not to an

¹ One might also mention the more dubious recent association of Schumpeter with so-called

earlier and later Schumpeter. The second, and more important, point is that the obsolescence thesis is wrong. It rests on a confusion – or perhaps a bait-and-switch – between two quite different kinds of economic knowledge.

II.

The conventional-wisdom analysis of Schumpeter's obsolescence thesis is in part a matter of oral tradition among (mostly) English-speaking writers whose interest in Schumpeter traces to a concern with innovation and technical change. But documentation in print is far from lacking. There are, in fact, several related versions of this conventional analysis. One of the clearest and best known traces to Almarin Phillips (1971), who focuses primarily on Schumpeter's view of technological innovation.² To Phillips, Schumpeter's early writings -- by which he means the 1934 English translation of *The Theory of Economic Development* -- present a very different picture of the logic of technological change in industry

endogenous growth theory, on which see Langlois (2001).

² In fact, Schumpeter's concept of innovation goes far beyond technological change in the narrow sense. He is concerned with what he calls "the carrying out of new combinations" interpreted broadly. "The concept," he writes, "covers the following five cases: (1) The introduction of a new good -- that is one with which consumers are not yet familiar -- or of a new quality of a good. (2) The introduction of a new method of production, that is one not yet tested by experience in the branch of manufacture concerned, which need by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially. (3) The opening of a new market, that is a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market has existed before. (4) The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created. (5) The carrying out of the new organisation of any industry, like the creation of a monopoly position (for example through trustification) or the breaking up of a monopoly position." (Schumpeter 1934, p. 66).

than do his later writings -- by which Phillips means *Capitalism, Socialism, and Democracy*.

In the "early" Schumpeter -- Schumpeter I -- the innovation process might best be characterized as a linear one. Christopher Freeman (1982) describes it this way. Basic inventions are more or less exogenous to the economic system; their supply is perhaps influenced by market demand in some way, but their genesis lies outside the existing market structure. Entrepreneurs seize upon these basic inventions and transform them into economic innovations. The successful innovators reap large short-term profits, which are soon bid away by imitators. The effect of the innovations is to disequilibrate and to alter the existing market structure -- until the process eventually settles down in wait for the next wave of innovation. The result is a punctuated pattern of economic development that is perceived as a series of business cycles. "The main differences between Schumpeter II and Schumpeter I," says Freeman, "are in the incorporation of *endogenous* scientific and technical activities conducted by large firms. ... Schumpeter now sees inventive activities as increasingly under the control of large firms and reinforcing their competitive position. The 'coupling' between science, technology, innovative investment and the market, once loose and subject to long time delays, is now much more intimate and continuous." (Freeman 1982, p. 214, emphasis original.)

There is no doubt that *Capitalism, Socialism, and Democracy* was far more concerned with the large corporation than was *The Theory of Economic Development*. Furthermore, it may even be that the former contains a more developed “model” of the process of technological change in industry than does the latter. But saying this still leaves us with at least two distinct interpretations of the early/late thesis. The weaker interpretation would be that, although Schumpeter's theory of innovation and development remained essentially the same in his later as in his earlier work, the “later” Schumpeter simply chose, for various reasons, to elaborate more fully on the nature of the large corporation and its role in his theory. And this weak form may well be what some writers have in mind. But it also seems quite clear that a good many other writers have a far stronger version of the early/late thesis in mind. The change from the “early” to the “later” Schumpeter reflects not a mere shift in his emphasis but a fundamental alteration of his underlying economic vision.

A principal manifestation of this change is held to be Schumpeter's revised assessment of the role of -- and of the necessity for -- market competition in the process of innovation. Richard Nelson's discussion is representative.

The early Schumpeter certainly did not view the economic problem as that of the control of clerks. His belief was that not only preferences and resources, but also technologies, change over time. Schumpeter, and Marx before him, saw the real power of a capitalist market system in terms of the ability of that system to spur innovation. He also believed that competitive markets provided an environment (monitored by final consumers and

powered by competition) that controls the processes of technological change and spreads benefits widely. In his later writings, he recanted the proposition that market competition was necessary for the generation of innovation, positing that in large corporate enterprises, innovation itself has become largely routinized. Therefore, he foresaw no particular disadvantages from socialization of the innovation process, as well as the more routine activities of the economy. (Nelson 1977, pp. 134-135.)

Moreover, Schumpeter's "recantation" of his earlier position is sometimes traced to or associated with a fundamental shift in philosophical orientation. "As it happens," writes Burton Klein, "Schumpeter expressed very different views in his later writings than in his earlier works, so much so that one has the impression there were two Schumpeters: Schumpeter the revolter against determinism, and Schumpeter the determinist." (Klein 1977, p. 133.)

A corollary to this conventional-wisdom interpretation is the notion that Schumpeter "changed his mind" because of what he saw developing in the contemporary economy. As Freeman puts it, the "shift of emphasis from the early Schumpeter ... to the late Schumpeter ... reflected the real change which had taken place in the American economy between the two World Wars and the rapid growth of industrial R&D in large corporations during that period" (Freeman 1982, p. 8). This is certainly not an implausible interpretation. Schumpeter did believe that economic history influences economic theory -- not in a historicist sense, but in the sense that some essential theoretical features are always outlined more sharply at some periods than at others. "Personally," he wrote, "I believe that there is an incessant give and take between historical and

theoretical analysis and that, though for the investigation of individual questions it may be necessary to sail for a time on one tack only, yet on principle the two should never lose sight of each other." (Schumpeter 1951, p. 259.)

Ultimately, however, this conventional interpretation -- that Schumpeter changed his fundamental position on the nature of innovation, and that he did so because of trends he saw developing in twentieth-century American capitalism -- is, I'm afraid, clearly wrong.

First of all, one can find examples from Schumpeter's work written *after* 1942 that present very much the same theory of entrepreneurship as does *The Theory of Economic Development*. (Schumpeter 1947, 1951). More significantly, the idea that the entrepreneur will eventually become "less important" or "obsolete" is already present in the 1934 translation of *The Theory of Economic Development*. The historical trend in favor of large firms that is theme of *Capitalism, Socialism, and Democracy* also turns up in the earlier book.

And if the competitive economy is broken up by the growth of the great combines, as is increasingly the case today in all countries, then this must become more and more true of real life, and the carrying out of new combinations must become in ever greater measure the internal concern of one and the same economic body. The difference made is great enough to serve as the water-shed between two epochs in the social history of capitalism. (Schumpeter 1934, p. 67.)

The contrast -- or, rather, lack of contrast -- between the English version of *The Theory of Economic Development* and *Capitalism, Socialism, and Democracy* can

perhaps best be seen in the juxtaposition of the following passages. The first is from the “later” Schumpeter.

This social function [entrepreneurship] is already losing importance and is bound to lose it at an accelerating rate in the future even if the economic process itself of which entrepreneurship was the prime mover went on unabated. For, on the one hand, it is much easier now than it has been in the past to do things that lie outside the familiar routine -- innovation itself is being reduced to routine. Technological progress is increasingly becoming the business of teams of trained specialists who turn out what is required and make it work in predictable ways. The romance of earlier commercial adventure is rapidly wearing away, because so many *things can be strictly calculated* that had of old to be visualized in a flash of genius. (Schumpeter 1942, p. 132, emphasis added.)

Schumpeter quickly goes on (p. 133) to liken the changes he foresees in the entrepreneur's role with those that have already taken place in the function of military commander. Now consider the following passage from the “early” Schumpeter.

The more accurately, however, we learn to know the natural and social world, the more perfect our control of facts becomes; and the greater the extent, with time and progressive rationalisation, within which *things can be simply calculated*, and indeed quickly and reliably calculated, the more the significance of this function decreases. Therefore the importance of the entrepreneurial type must diminish just as the importance of the military commander has already diminished. (Schumpeter 1934, p. 85, emphasis added.)

These passages are important, and I shall return to them presently.

In their translation of Schumpeter's 1928 essay “Entrepreneur,” Becker and Knudsen (in this volume) show clearly that Schumpeter's mature theory of

entrepreneurship was already in place by 1926, when he revised the first German edition of *Theory of Economic Development*. That 1926 edition formed the basis of the 1934 English translation, which, as I have shown, is fully consistent with the obsolescence thesis in *Capitalism, Socialism, and Democracy*. This immediately puts to rest the notion – which has never been based on any textual evidence anyway, as far as I can tell – that Schumpeter was somehow influenced by his observations of large American corporations in the 1930s. Becker and Knudsen see a real change in Schumpeter’s theory of entrepreneurship between 1912 and 1926.³ Rather than conceptualizing entrepreneurship as a psychological characteristic of a subset of the population, he came to portray entrepreneurship in a “depersonalized” way as an ideal type.⁴ In the post-1926 theory, entrepreneurship needn’t fill the vessel of any actual person; it reflects instead a category of action into which individuals (organizations?) may fall at various times and places. To Becker and Knudsen, this change enables the obsolescence thesis, since it makes the entrepreneur less “pushy” and therefore permits an easy movement to an institutionalized version of entrepreneurship. As they put

³ But even in the 1912 original, Schumpeter toyed with the idea that the state could take over the entrepreneurial role. (See especially Schumpeter 1912, pp. 173ff. Thanks to Wolfgang Gick for help with the German.) A more detailed study might well discover that the continuity really goes back to 1912 or earlier, not merely to 1926.

⁴ Becker and Knudsen attempt to explain Schumpeter’s new stance on entrepreneurship in terms of events and tragedies in his personal life. I find far more compelling the possibility, which Becker and Knudsen discount, that, always ambitious and sensitive to intellectual fashion, Schumpeter was simply reflecting the widespread popularity of Max Weber’s approach in the German-speaking world of the 20s, an approach that had pushed into the background the older traditions of Austrian economics and the German Historical School that had influenced the 1912 edition.

it, the entrepreneur has become a carrier of change rather than a cause of change. However one interprets this transition from the “old” Schumpeter to the “new,” however, it is not the transition that writers in the Anglo-American literature of technological change think they see. That one never happened.

III.

Why then are so many writers inclined to see “two Schumpeters”? The simple answer is that Schumpeter has the distinction of being the principal source for the notion that entrepreneurship (a word that is shorthand for a complex set of theoretical ideas) is crucial to the economic process and -- at the same time -- the principal source for precisely the opposite conception: that entrepreneurship is no longer (or will soon no longer be) of any consequence whatever for the economic process, having been replaced entirely by rational calculation. There are two identifiable strands of thought in Schumpeter; they are self-consistent, but they cannot be reconciled with one another. Reading him is thus a kind of litmus test: picking out one of the strand leads in one direction; picking out the other leads in precisely the opposite direction. Schumpeter I gives you such neo-Schumpeterian writers as Nelson and Winter (1982) and Klein (1977). Schumpeter II gives you John Kenneth Galbraith.

But if, as I've argued, this coexistence does not reflect a change of opinion, then what is the source of Schumpeter's litmus effect? The answer, I believe, is

that the “Schumpeterian tension” arises from the unreconciled coexistence in his writings of two incompatible epistemic theories, to use the suggestive term of G. L. S. Shackle (1972) -- two inconsistent views of the role of knowledge and ignorance in the economic process.

Perhaps the best way to explicate this claim is to recast it in terms of another -- closely related -- tension in Schumpeter. It is well known that Schumpeter was a great admirer of Walras. “[S]o far as pure theory is concerned,” he wrote in his *History of Economic Analysis*, “Walras is in my opinion the greatest of all economists.” He goes on to suggest that Walras's work “will stand comparison with the achievements of theoretical physics” (Schumpeter 1954, p. 827). Yet, while his professed scientific attitude and aesthetic sensibilities may have been Walrasian, his own theory is *in substance* very *un-Walrasian*. Indeed, many have portrayed Schumpeter -- with a good deal of justification -- as representing a theoretical perspective and tradition alternative and antagonistic to the Walrasian approach that, by all accounts, dominates modern economic thought. (Nelson and Winter 1982, pp. 39-40). More precisely, one might say that Schumpeter's theory is in substance *Mengerian* rather than Walrasian.

There are really only two attitudes with which to approach economic doctrine. One can take the position that, beneath the inevitably discordant pronouncements of the various theorists with whom one is concerned, there lies

an essential unity; the differences are unimportant, merely epiphenomenal to that underlying unity. Or one can take the position that it is the *differences* that are essential, that whatever superficial similarities may appear among theories are in fact merely a cover for fundamentally divergent views. Schumpeter adopted the former attitude, at least so far as the marginalist revolution -- and indeed the economics of his own day -- was concerned. "Nobody denies that, numerous differences in detail notwithstanding, Jevons, Menger, and Walras taught essentially the same doctrine"⁵ (Schumpeter 1954, p. 952).

However true such an assertion might have been in 1950, it is clear that, in the last few decades at least, quite a number of historians of thought have begun to deny just that. The marginalist revolutionaries have been "dehomogenized" (to use Jaffé's (1976) expression), a development that may say as much about the status of present-day economics as it does about that of the 1870s. And most of the dehomogenizers wish to enlist the syncretist and Walras-admiring -- but also Austrian -- Schumpeter into the dissident Mengerian camp. "It is just because he admired Walras so much," writes Erich Streissler, "that Schumpeter is such a bad guide to the real Austrian achievement, which has always been in complete contrast to Walras" (Streissler 1972, p. 430n). One might also say that

⁵ Regarding Schumpeter's attitude toward the unity of economic thought in his own day, see Schumpeter (1982). In an article written not long after Schumpeter's death, Fritz Machlup defended this syncretism -- «a conciliatoriness which could be misjudged as weak eclecticism» -- as a form of methodological tolerance or methodological pluralism. (Machlup 1951, p. 146.)

Schumpeter's admiration for Walras also served to mask the distinctly non-Walrasian character of his own achievement.

There are a number of ways in which Schumpeter's work displays affinities to that of Menger. In one important sense, both were more in the classical than the neoclassical tradition.⁶ Like Adam Smith, they were concerned with the problem of economic development -- of the creation of wealth -- rather than with questions of the simple allocation of resources. "It is in the true tradition of Menger that Schumpeter's treatment of technical progress is so much more inclusive than the Marxian or modern neoclassical treatment" (Streissler 1972, p. 431). Other similarities between Schumpeter and Menger would include an emphasis on disequilibrium processes; a concept of competition very unlike the Walrasian "perfect competition" construct; and a concern with social institutions.⁷ For present purposes, though, the most important way in which Schumpeter's theory is Mengerian (or at least non-Walrasian) is in its attitude toward economic knowledge and learning.

Having appropriated Shackle's term "epistemic," let me now turn it to my own uses. There are, it seems to me, two fundamental categories of epistemic theories -- that is, two categories of theories about the way economic agents

⁶ "Schumpeter is much closer intellectually to Marshall and Smith than he is to Samuelson and Arrow." (Nelson 1977, p. 136.) "Schumpeter was well within the classical tradition." (Nelson and Winter 1977, p. 64.)

⁷ Streissler (1972, *passim*); Jaffé (1976, *passim*); and Kirzner (1979, esp. p. 3). But see also Kirzner (1979, pp. 53-75).

know and learn.⁸ One category is that of *rationalist* theories. Broadly speaking, such theories portray the rationality of economic agents as consisting entirely in logical deduction from explicit premises. In ordinary neoclassical models -- which clearly fall into this category -- the agent faces a problem of maximization (or minimization). The agent is rational when he or she solves that problem correctly. The data of the problem -- what the agent "knows" -- is always given, and any learning that takes place is also a matter of logical processing (*e. g.*, Bayesian updating) of given data.

The other category is that of *empiricist* theories. In an empiricist theory, the criterion of rationality is less demanding, typically requiring only reasonable behavior in light of the situation the agent faces, not behavior reflecting the substantively correct solution to an explicit (and sometimes quite complicated) problem. More importantly, the nature and source of the agent's knowledge is empirical in character; it is gained from experience rather than deduced. As a result, the agent's knowledge is frequently tacit (Polanyi 1958) or contained inexplicitly in various habits, conventions, and institutions.

In his discussion of the role and importance of entrepreneurship, Schumpeter places himself squarely in the empiricist camp. "The assumption that conduct is prompt and rational," he says, "is in all cases a fiction. But it

⁸ I have developed these ideas at some length elsewhere, especially in Langlois (1985) and Langlois (1986). See also Boland (1982) and Littlechild (1986).

proves to be sufficiently near to reality, if things have time to hammer logic into men. ... But this holds good only where precedents without number have formed conduct through decades and, in fundamentals, through hundreds of thousands of years, and have eliminated unadapted behavior" (Schumpeter 1934, p. 80). This is a conception of behavior as fundamentally rule-governed.⁹ For Schumpeter, rationality as conscious calculation exists only within a small sphere carved out from and defined by the larger mass of the agent's inexplicit knowledge. Within this sphere, "we can depend upon it that the peasant sells his calf just as cunningly and egotistically as the stock exchange member his portfolio of shares" (Schumpeter 1934, p. 80).

The other important aspect of an empiricist epistemic theory of the sort Schumpeter adheres to in these passages is the inherently open-ended or evolutionary character of economic knowledge it implies. Since economic knowledge is not a matter of logical deduction from givens, that knowledge is potentially unbounded. There is always new knowledge that is not yet not within the agent's "calculative sphere" or means/ends framework. Indeed, the job of the entrepreneur is precisely to introduce new knowledge.¹⁰ The "Circular Flow of Economic Life" is a state in which knowledge is not changing. Economic

⁹ See especially Schumpeter (1934, p. 83).

¹⁰ As Schumpeter repeatedly stressed, the knowledge with which he was concerned is new from the economic point of view -- not necessarily from the scientific or technical point of view. For him, an idea becomes an innovation when it is tried out in practice for the first time -- again emphasizing the empirical character of the conception.

growth occurs at the hands of entrepreneurs, who bring into the system knowledge that is qualitatively new -- knowledge not contained in the existing economic configuration.

This novelty is what distinguishes the entrepreneurial function from that of manager or the capitalist. This is why one is an entrepreneur only while carrying out new combinations, not once the business is well established. To Schumpeter, "the distinctive element is readily recognized so soon as we make clear to ourselves what it means to act outside the pale of routine. The distinction between adaptive and creative response to given conditions may or may not be felicitous, but it conveys an essential point; it conveys an essential difference." (Schumpeter 1951, p. 253.)

The crucial point for my argument is that a conception of entrepreneurship (or something very much like it) is essential for any theory that proposes to deal with innovation and economic growth.¹¹ Conventional neoclassical models tell stories about the adjustment of known means to given ends, but they say very little about how those means and ends change or come into being in the first place. Schumpeter would seem to agree strongly that a concept of entrepreneurship is a theoretical necessity. In a vibrant passage, he

¹¹ Indeed, from the point of view of internal logical consistency, the issues Schumpeter raises are fundamentally troubling ones for neoclassical theory. If rationality is *defined* as optimally adjusting means to ends, then the act of *choosing the framework of means and ends in the first place* can never ultimately be a rational one. (Winter 1964, pp. 262-4; Kirzner 1982, pp. 143-5; Elster 1983, pp. 74-5; Langlois 1986, p. 227 and *passim*.)

describes the epistemic role of the entrepreneur (if I may put it that way) in a manner that emphasizes the empirical nature of his conception.

What has been done already has the sharp-edged reality of all things which we have seen and experienced; the new is only the figment of our imagination. Carrying out a new plan and acting according to a customary one are things as different as making a road and walking along it.

How different a thing this is becomes clearer if one bears in mind the impossibility of surveying exhaustively all the effects and counter-effects of the projected enterprise. Even as many of them as could in theory be ascertained if one had unlimited time and means must practically remain in the dark. As military action must be taken in a given strategic position even if all the data potentially procurable are not available, so also in economic life action must be taken without working out all the details of what must be done. Here the success of everything depends on intuition, the capacity of seeing things in a way which afterwards proves to be true, even though it cannot be established at the moment, and of grasping the essential fact, discarding the unessential, even though one can give no account of the principles by which this is done. Thorough preparatory work, and special knowledge, breadth of intellectual understanding, talent for logical analysis, may under certain circumstances be sources of failure. (Schumpeter 1934, p. 85.)

Entrepreneurship -- introducing the qualitatively new -- is an activity inherently different, it would seem, from the kind of rational calculation portrayed in the imagery of neoclassical modeling.

It is interesting that Schumpeter regards the entrepreneurial act as requiring in fact *greater* conscious rationality than routine activity. (Schumpeter 1934, p. 85.) This reemphasizes the empirical nature of his conception of economic knowledge. Routine behavior requires less conscious rationality

because it is essentially “preprogrammed” through trial-and-error learning. Notice, of course, that the conscious rationality of the entrepreneur is not *adequate* -- in “early” capitalism, at any rate -- to the task of innovation. This is why entrepreneurship requires intuition, the leap of logic.

But -- and here we get to the heart of the matter -- conscious rationality, for Schumpeter, is in fact becoming increasingly adequate to the job of dealing with the radically new.

The more accurately, however, we learn to know the natural and social world, the more perfect our control of facts becomes; and the greater the extent, with time and progressive rationalisation, within which *things can be simply calculated*, and indeed quickly and reliably calculated, the more the significance of this [entrepreneurial] function decreases. *Therefore* the importance of the entrepreneurial type must diminish just as the importance of the military commander has already diminished. (Schumpeter 1934, p. 85, emphasis added.)

Notice the syllogism. Because the unknown can be increasingly calculated rationally, the “extra-logical” function of the entrepreneur becomes increasingly unnecessary, and so the importance of the entrepreneurial type must diminish.

What this amounts to is a strange commingling of an empiricist and a rationalist theory of economic knowledge. In “early” capitalism (*not* the “early Schumpeter”) economic rationality derived largely from evolved habit and convention; attempts to step outside this configuration of knowledge could not be accomplished by conscious rationality and explicit calculation. Rationality was “bounded,” in effect. In “later” capitalism (*not* the “later Schumpeter”) the

bounds of rationality are being broken. Conscious rationality is beginning to conquer not merely the entrenched conventions of the past but also the previously unknowable future.

Perhaps the analogy with a more recent writer will make this clearer. Schumpeter's epistemic theory (if I may use that high-blown phrase again) is ultimately very close to that of Herbert Simon (Langlois 1990, 2003). Simon is, of course, the author of the expression "bounded rationality." The basic idea is that human information-processing capacity is limited, making conscious rationality of the neoclassical variety quite impossible. The agent must therefore "satisfice" and rely on heuristic approximations. What is typically overlooked in Simon's conception, however, is that it is at base a strongly rationalist theory of knowledge. For Simon, one is rational only when one has reached the substantively correct solution of the explicit choice problem one faces. His preferred imagery includes chess games and complex differential equations, problems that do in fact have substantively correct solutions, even if they are solutions to which we can at present only aspire. His innovation, in short, is to suggest that one may only approximate true rationality; he does not ultimately call the notion itself into question. Moreover, Simon like Schumpeter is convinced that improvements in computational and management technique will provide closer and closer approximations to true rationality and may even unbound rationality in some spheres.

IV.

What, then, are we to make of the “Schumpeterian tension”? I contend that it has strong implications for Schumpeter's assessment of the workability of socialism and the eventual demise of capitalism.

Schumpeter's argument, we saw, goes something like this. Entrepreneurship -- bringing the radically new into the economic system -- has been the province of bold individuals because, in a world of limited knowledge, it is necessarily an unpredictable and extra-rational activity. Notice that this is in effect an argument in favor of a capitalist (or, more correctly, a liberal) social order. For Schumpeter, the relative efficiency of an economic system depends not on how it “administers existing structures” (Schumpeter 1942, p. 84) but on how well it generates innovation. Because of limited knowledge, “planning” is incompatible with innovation; progress depends on the ability of individuals to command resources and direct them in unconventional and surprising directions. But the limits to knowledge are disappearing, Schumpeter believes, and socialism will thus eventually come to be roughly as effective as capitalism in generating economic growth.

But does the argument hold water? Does the growth of economic and technical knowledge in fact imply that innovation is becoming predictable and routine? This is a matter of some dispute. It is certainly true that innovation -- or R&D, at any rate -- is more organized today than it was in the nineteenth

century. This is a manifestation of the growing division of labor, one that would not have surprised Adam Smith and the classicals (Langlois 2002). But for Smith, the increasing division of labor did not generate innovation because it made the future predictable; rather, the division of labor heightened innovation because it increased the diversity of ideas in society. Innovation remained a matter of empirical trial and error.

We can put the issue somewhat differently. I have argued that Schumpeter's story of a transition from bounded to unbounded rationality actually implies a transition from an empiricist to a rationalist theory of economic knowledge. Is such a transition possible? Or does Schumpeter's account ultimately rest on a *confusion* of two logically distinct *kinds* of knowledge? Although I cannot mount the arguments here,¹² there is good reason to think that such a confusion is indeed in operation in Schumpeter. If so, the mechanization-of-progress thesis loses much of its force.

In order to see what this would mean, we need to understand the routinization of progress, and thus the passing of the entrepreneur, in the complete context of Schumpeter's sociological argument. "We have seen," he says, "that, normally, the modern businessman, whether entrepreneur or mere managing administrator, is of the executive type. From the logic of his position he acquires something of the psychology of the salaried employee working in a

¹² But see Lavoie (1985) for a discussion of the "socialist calculation debate" along these lines.

bureaucratic organization" (Schumpeter 1942, p. 156). This is not an unfamiliar observation. The conclusion usually drawn from it, especially by writers in the now well-developed tradition of Berle and Means (1932), is that it is therefore a matter of indifference, from a functional standpoint, whether the productive organization is privately or state owned; indeed, state ownership would seem preferable since its motives are "public" and hence purified of the taint of private desire.

Schumpeter draws a much different conclusion from this observation. To Schumpeter, the crucial fact about the modern corporation is that its managers cannot fill the strong social role played by the entrepreneur. Entrepreneurs are pillars of strength, symbols of legitimacy, role models. They provide the new ideas and new blood that refresh the "bourgeois stratum." "Economically and sociologically, directly and indirectly, the bourgeoisie therefore depends on the entrepreneur and, as a class, lives and dies with him, though a more or less prolonged transitional stage -- eventually a stage in which it may feel equally unable to die and to live -- is quite likely to occur, as in fact did occur in the case of the feudal civilization" (Schumpeter 1942, p. 134). Socialism will succeed because, without the entrepreneur to guard it, "the bourgeois fortress ... becomes politically defenseless." It is not the managerial class who are the plunderers; it is a New Class of socialist intellectuals and government officials. "Defenseless fortresses invite aggression, especially if there is rich booty in them. Aggressors

will work themselves up into a state of rationalizing hostility -- aggressors always do. No doubt it is possible, for a time, to buy them off. But this last resource fails as soon as they discover that they can have it all" (Schumpeter 1942, p. 143).

Schumpeter is thus after bigger game than Berle and Means: nothing less than Marx himself. Schumpeter has no great love for a socialist system (or, in particular, a socialist *culture*); but he does see the similarities between private and state bureaucracy as smoothing the way for socialism. "Thus the modern corporation, although the product of the capitalist process, socializes the bourgeois mind; it relentlessly narrows the scope of capitalist motivations; not only that, it will eventually kill its roots" (Schumpeter 1942, p. 156). Like Marx, then, he sees capitalism as leading to its own destruction. But unlike Marx, Schumpeter sees capitalism as the victim of its own economic success not its economic failure. This tale stands Marx on his head, its plot laced with a heavy and self-satisfied irony. The tone is disinterested and the attitude fatalistic; but the message is largely cautionary. At base, Schumpeter is nothing so much as a neoconservative, perhaps the first neoconservative.

How would this story have to change if Schumpeter is wrong about the mechanization of progress? On one level, the effect is significant. An economic system that continues to rely on tacit, empirical knowledge -- what F. A. Hayek (1945) called "the knowledge of the particular circumstances of time and place" --

would sacrifice much of its innovativeness, and thus much of its engine of progress, by consigning its industry and commerce to a bureaucratic socialism. This would certainly make the transition to socialism much more painful to the voting population, and thus would likely slow or modify (if not necessarily prevent) its advent. Needless to say, this interpretation seems far more compelling now after 1989 than it did perhaps when Schumpeter was writing.

The role of the mechanization-of-progress thesis in the larger sociological theory is to underscore the power of bourgeois capitalism on an economic level: it is so efficient that it has conquered even our ignorance of the unknown; it can stamp out innovation with all the efficiency that it brings to bear on stamping out mass-produced goods. To deny capitalism this power over the future mars the aesthetic of Schumpeter's panorama somewhat, for it makes the inversion of Marx less perfect than otherwise, and it diminishes the fatalism that gives the story much of its color.

In the end, however, taking all this too seriously puts us in danger of reading Schumpeter literal-mindedly. The force of the argument is in the texture of the landscape -- not in its details. Indeed, there is a sense in which the "Schumpeterian tension" -- the tension between the Schumpeter who comes to praise entrepreneurship and the Schumpeter who comes to bury it -- actually enriches the majestic irony of *Capitalism, Socialism, and Democracy*.

References.

- Berle, A. A., and G. C. Means. 1932. *The Modern Corporation and Private Property*. New York: Macmillan.
- Boland, Lawrence A. 1982. *The Foundations of Economic Method*. London: Allen and Unwin.
- Elster, Jon. 1983. *Explaining Technical Change*. Cambridge: Cambridge University Press.
- Freeman, Christopher. 1982. *The Economics of Industrial Innovation*. Cambridge: MIT Press, second edition.
- Galbraith, John Kenneth. 1967. *The New Industrial State*. Boston: Houghton-Mifflin. [Second edition 1971.]
- Hayek, F. A. 1945. "The Use of Knowledge in Society," *American Economic Review*
- Jaffé, William. 1976, "Jevons, Menger, and Walras De-Homogenized," *Economic Inquiry* **14**: 511-24.
- Kirzner, Israel M. 1973. *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Kirzner, Israel M. 1979. *Perception, Opportunity, and Profit*. Chicago: University of Chicago Press.
- Kirzner, Israel M. 1982. "Uncertainty, Discovery, and Human Action," in Kirzner, ed., *Method, Process, and Austrian Economics*. Lexington, Mass.: D.C. Heath.
- Klein, Burton H. 1977. *Dynamic Economics*. Cambridge: Harvard University Press.
- Langlois, Richard N. 1985. "Knowledge and Rationality in the Austrian School: An Analytical Survey," *Eastern Economic Journal* **9**(4): 309-330.
- Langlois, Richard N. 1986. "Rationality, Institutions, and Explanation," in R. N. Langlois, ed., *Economics as a Process: Essays in the New Institutional Economics*. New York: Cambridge University Press.
- Langlois, Richard N. 1990. "Bounded Rationality and Behavioralism: A Clarification and Critique," *Journal of Institutional and Theoretical Economics* **146**(4): 691-695 (December).

- Langlois, Richard N. 2001. "Knowledge, Consumption, and Endogenous Growth," *Journal of Evolutionary Economics* **11**(1): 77-93 (January).
- Langlois, Richard N. 2002. "The Vanishing Hand: the Changing Dynamics of Industrial Capitalism," working paper. Available at <http://www.sp.uconn.edu/~langlois/Vanishing.html>
- Langlois, Richard N. 2003. "Cognitive Comparative Advantage and the Organization of Work: Lessons from Herbert Simon's Vision of the Future," *Journal of Economic Psychology*, forthcoming.
- Lavoie, Don. 1985. *Rivalry and Central Planning*. New York: Cambridge University Press.
- Littlechild, Stephen C. 1986. "Three Types of Market Process," in R. N. Langlois, ed., *Economics as a Process: Essays in the New Institutional Economics*. New York: Cambridge University Press.
- Machlup, Fritz. 1951. "Schumpeter's Economic Methodology," *Review of Economics and Statistics* **33**(2): 145-151.
- Nelson, Richard R. 1977. *The Moon and the Ghetto*. New York: Norton.
- Nelson, Richard R., and Sidney G. Winter. 1977. "In Search of Useful Theory of Innovation," *Research Policy* **5**: 36-76.
- Nelson, Richard R., and Sidney G. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambridge: Harvard University Press.
- Phillips, Almarin. 1971. *Technology and Market Structure: A Study of the Aircraft Industry*. Lexington, Mass.: D. C. Heath.
- Polanyi, Michael. 1958. *Personal Knowledge*. Chicago: University of Chicago Press.
- Schumpeter, Joseph A. 1912. *Theorie der wirtschaftlichen Entwicklung*. First edition. München and Leipzig: Verlag von Duncker & Humblot.
- Schumpeter, Joseph A. 1926. *Theorie der wirtschaftlichen Entwicklung*. Second edition. München and Leipzig: Verlag von Duncker & Humblot.
- Schumpeter, Joseph A. 1934. *The Theory of Economic Development*. Tr. Redvers Opie. Cambridge: Harvard University Press. (New York: Oxford University Press, 1961.) Translation based on Schumpeter (1926).

- Schumpeter, Joseph A. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper and Brothers. (Harper Colophon edition, 1976.)
- Schumpeter, Joseph A. 1947. "The Creative Response in Economic History," *Journal of Economic History* 7(2): 149-159.
- Schumpeter, Joseph A. 1951. "Economic Theory and Entrepreneurial History," in R. V. Clemence, ed., *Essays on Economic Topics of Joseph Schumpeter*. Port Washington, NY: Kennikat Press.
- Schumpeter, Joseph A. 1954. *History of Economic Analysis*. New York: Oxford University Press.
- Schumpeter, Joseph A. 1982. "The 'Crisis' in Economics -- Fifty Years Ago," *Journal of Economic Literature* 20(2): 1049-59. (Manuscript thought to have been written in 1931.)
- Shackle, G. L. S. 1972. *Epistemics and Economics*. Cambridge: Cambridge University Press.
- Shane, Scott, and S. Venkataraman. 2000. "The Promise of Entrepreneurship as a Field of Research," *Academy of Management Review* 25(1): 217-226.
- Streissler, Erich. 197. "To What Extent Was the Austrian School Marginalist?" *History of Political Economy* 4(2): 426-441.
- Winter, Sidney G. 1964. "Economic 'Natural Selection' and the Theory of the Firm," *Yale Economic Essays* 4: 225-72.