VERSÃO PRELIMINAR
THE ENTREPRENEUR AND THE STYLE OF MODERN ECONOMICS

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INTRODUCTION

Economic theory and the entrepreneur have never made easy travelling companions and I want in this brief essay to enquire why this is so. This is an important problem for it raises the question of the extent that economic theory has really come to terms with the nature of capitalism as an engine of growth and development. At the same time, it is a difficult problem to solve satisfactorily, and any resolution requires that what managers do be distinguished from what entrepreneurs do. In itself, this would be the basis for a very long essay. Yet, the justification of even a brief treatment is that these are questions that can, and should, bind economists and management scholars in a common endeavour. At the outset, we must recognize that acceptable definitions of entrepreneurial activity and its image, the entrepreneur, the agent of entrepreneurial behaviour, are not readily achieved. Entrepreneurship is not one-dimensional and the entrepreneur comes in shades of many different kinds, such that it is presumptuous to conceive of a simple, unifying approach. Baumol (1993) in his extended discussion of the topic includes, ‘the use of imagination, boldness, ingenuity, leadership, persistence and determination’ as relevant characteristics of those who engage in novel activities: a list that adequately warns us of difficulties that lie ahead in finding an adequate frame of analysis for these troublesome individuals. None is offered here, although we will see how the ability of a theoretical frame to incorporate the entrepreneurial function provides a sharp demarcation test for different kinds of theory of an economy. Moreover, the matter of entrepreneurship has wider implications and here the central problem is not how we deal with economic change but how we deal with change generated within the economic system as distinct from change imposed upon it from outside. Why do we conceive of entrepreneurial economies as self-transforming economies? The modern characteristic of ceaseless change is not characteristic of earlier times. What is it about the process of modern capitalism which makes it so revolutionary, perhaps too revolutionary for its own long term good? Our suggested answer is that the dynamic of modern capitalism lies in the combinatorial growth of knowledge and investment opportunities combined with the

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instituted frameworks of the market economy that taken together simultaneously stimulate and enable entrepreneurial activity. Here there is a paradox, with which any observer of modern economics must contend. Entrepreneurial behaviour is pervasive yet economic theory, with one or two very significant exceptions, has virtually nothing to say about either its significance or about its origins. This is a pity for the failure to treat the entrepreneur seriously cuts off research and advanced teaching in economics from the central dynamic of modern capitalism, its restless, searching, experimental nature; and renders it particularly difficult to teach students of business the significance of the economic institutions that define the modern world. In this brief essay, I will explore this conundrum and suggest that bringing in the entrepreneur means pushing out several of the cherished methodological stances of modern economics. I will conclude with the claim that only an evolutionary stance on the economic process can give the entrepreneurial function its due place in our thinking. If that is contentious, so be it, the contest between ideas is itself an entrepreneurial, experimental and evolutionary process.

The Entrepreneur

It will help to begin with a definition of what the activity of entrepreneurship consists. We may begin very broadly, defining it as the activity of creating and implementing a new business plan, in many cases but not all cases reducible to the creation of a new business entity, the prototypical small firm. Consider first Baumol’s, (1990) definition of entrepreneurs as, ‘Persons who are ingenious and creative in finding ways that add to their own wealth, power, and prestige’. From this follows the idea of the entrepreneur as the agent responsible for conceiving and implementing new business plans, plans to create wealth, power and prestige. Since plans require resources for their activation, we find an easy transition to definitions such as that provide by Mark Casson, who defines the entrepreneur as, ‘someone who specializes in making judgmental decisions about the allocation of scarce resources’ (Casson, p.151). If it is the nature of the judgmental decisions that matters, then, as Ripsas (1998) suggests, they have three principal attributes: their innovative nature, and by implication their connection with new knowledge; the uncertain prospects attached to them, and thus their dependence on partial knowledge; and, finally, the extraordinary profit rewards that can follow from implementing these decisions and thus their connection with radical knowledge.

Such a broad perspective is useful as a starting point but it clearly needs some sharpening if it is to be useful, for any change in business activity falls within this remit; it is, at once, too broad and too narrow. It is too broad because we would want to exclude changes in business arrangements that are purely adaptive responses to changes in the economic environment, accommodations within an existing business framework. If when the price of copper increases, makers of electrical cables substitute aluminium as the material of choice, we would not normally consider this to be entrepreneurial, merely good stewardship of existing economic resources. Similarly, the founding of any new business stretches the notion of the entrepreneur too far. Many business ventures are copies of existing businesses whose function is to
ensure the continuity of economic activities through time, they are based on knowledge of well established markets and practices, and in that sense bring nothing new to the economy. While they require resources to be marshalled appropriately, and while they inevitably carry the risks associated with the newness of the venture, they are entrepreneurial to a negligible degree. On the other side of the account these definitions are to narrow, for they risk excluding entrepreneurial activity based on teams working within existing enterprises, and excluding entrepreneurship in non-economic contexts, and in the context of public enterprise (Baumol, 1990, 1993). We also need to acknowledge that not only the business leader can be entrepreneurial. Indeed, to give one example, there is an enormous gap in our thinking about the entrepreneurial role of the consumer in the modern economy, in deciding for what particular goods are used. Thus, a working definition needs to go beyond the idea of passive adaptation in known knowledge frames, to focus on the positive element of novel conjectures that bring new knowledge or beliefs into economic application. The point about these conjectures is that while they may have a partial basis in knowledge, they rest in large part on beliefs that are yet to be tested, to be confirmed or falsified. This inevitably brings the definition closer to the Schumpeterian conception of new combinations of resources that include a basis in new technology but are not limited to that. The business conjectures that Schumpeter noted also extend to new markets, new forms of organization and the discovery of new natural materials and they explicitly, and unfortunately, de-emphasized the role of the entrepreneurial consumer. It is not useful to equate entrepreneurial activity only with technology based business opportunities even though these are important, and in the case of many famous technology-based entrepreneurs such as Edison (Millard, 1990) or Sperry (Hughes, 1971) central to their achievements. We shall say more about the Schumpeterian dimension in a moment but one or two other preliminary remarks are in order.

The first is that an understanding the entrepreneurial function cannot be separated from the nature of the economic system in which it is exercised. Its nature and consequences are embedded in the wider system of market and non-market economic institutions. The prevailing features of a market economy produce a particular spectrum of entrepreneurial activities in a different set of institutional arrangements, say of labour managed firms, or of stakeholder capitalism, the entrepreneurial spectrum will take on a different hue because those systems give different meanings and content to entrepreneurial activity and provide different incentive systems from shareholder capitalism (Adaman and Devine, 2002).

What, then, are the instituted features of modern capitalism that create such a strong symbiosis with entrepreneurship? They are four in number. The first of these is that of the open market in which every established business position is open to challenge, unless protected via a patent, copyright or other limitation. If we see competition not as a state of affairs graded by the structure of the market but as a dynamic process of rivalry and struggle for a share of the market then entrepreneurial activity is both necessary and sufficient to create competition. The general rule is that any market can be entered, provided the business idea is good enough and provided incumbents do not create sufficiently onerous, artificial barriers to entry. Indeed competition authorities in the advanced economies spend a good deal of time
preventing incumbent firms artificially closing off their markets to entry. Indeed, it is rather obvious that since any entrant incurs costs there will usually be some compensating entrepreneurial advantage in product design and quality, method of production or scheme for distribution to customers that puts the incumbent at a disadvantage vis a vis the new source of competition and which helps circumvent entry barriers. In this sense, entrepreneurship is pervasive because the idea of an open competitive market process is pervasive. A firm never quite knows where the threats to its existence will come from; and frequently they come from such unanticipated directions that their significance is discounted until it is too late. Secondly, markets play fundamental roles in relation to the incentives for and rewards to entrepreneurial behaviour. The prevailing market based valuations of products and productive services allow the prospective entrepreneur to gauge the potential profitability of a new venture by virtue of its having to fit into the current pattern of activity. Market signals matter not only in the sense of encouraging the efficient use of existing business knowledge, the traditional argument in favour of the competitive organization of industry, but also in the deeper sense of guiding the competitive process of entrepreneurial change. Without prices no entrepreneur could judge that a business conjecture is potentially viable: he would be doubly blind, not knowing whether either the quantity conjectures or the value conjectures on which the plan depends are plausible. Markets generate this information and thus connect new beliefs with existing patterns of resource allocation. All entrepreneurial conjectures compete with some existing activity even if the true margins of competition are initially misconceived and revealed in surprising ways ex post. Notice that this remains true even for those radical entrepreneurial conjectures that, for example, introduce products previously unheard of. Even these products must be conjectured to displace existing products in consumers expenditure and to utilise resources employable elsewhere in the economy. Even if the radical reconfigurations of demand and reallocations of resources that flow from truly radical innovations cannot be foreseen, the starting point for the entrepreneurial process surely can by virtue of existing market relations. Of course, this is to claim nothing more than the significance indeed necessity of an element of continuity in the economic process, new activity always builds on an existing base, in this sense, all change is cumulative as Marshall’s famous epigram, ‘natura non facit saltum’ reminds us. Thirdly, markets are instituted devices for generating low cost access to consumers and productive services. Markets are structures for indicating the terms on which resources are available and open markets for skilled workers and for free capital are essential to an entrepreneurial economy and, without them the possibility of entrepreneurial behaviour will be greatly circumscribed. Thus, there is a close correspondence between the institutions of the market place and the spectrum of entrepreneurial behaviour it engenders and supports. Consider, for example, the institution of the patent right. Patents provide important incentives to entrepreneurs in that they protect a market opportunity for a circumscribed period. They protect against the narrow imitator who merely seeks to copy a novel idea but this protection is not absolute. Any patent can in principle be invented around, indeed the requirement that a patent be published indicates to potential inventors exactly what inventing around would mean. The entrepreneur who bases a rival business on a different novel idea
may thus destroy the economic basis of an established patent. Patents are an extremely clever institution, their protection is important but it is not unlimited, and deliberately so, and it is helpless in the face of other genuinely novel entrepreneurial actions. This takes us to the fourth and final aspect of the institutions of a market economy, the incentives they provides for entrepreneurship. Whether or not profits are the *primum mobile* of the entrepreneur, there can be no doubt those profits are a necessary feature of such activity and that their prospect is essential in the process of attracting risk capital to support conjectures for which there cannot be any basis in fact. Novelty may be its own reward but novelty is also the signal that what the entrepreneur does is economically superior to already established competing activities. Abnormal profits, far from being an index of the absence of competition, are the very proof that competition is actively pursued, that resources are being reallocated. This is the crucial role that profits and losses play in the mobilization of changes in economic structure by focusing on competitive equilibrium we hide this from view.

The second point we must address briefly relates to the wider significance of entrepreneurial activity, in pointing to the particular mechanisms of economic change in modern capitalism. The fundamental issue here is that economic growth is never steady advance with all activities expanding at the same rate, as the prominent, aggregative theories of economic growth would have us accept. For then, scale apart, one year is identical to the next, whether growth is positive or negative makes no difference. By contrast, we know that growth always follows on from development, from changing the economic structure quantitatively and qualitatively. Not only do activities change in relative importance, their absolute scale changes unevenly, while many grow absolutely others decline absolutely. The other side of the creative entrepreneurial coin is that activities disappear from the economic scene, that we cannot put resources to new uses without scaling down the old uses. In short, a theory of decline in economic activities is an integral part of any useful theory of economic growth. Intuitively, or at least with a reasonable knowledge of the history of the last two centuries, structural and qualitative change seem to be inseparable from the economic process. The economic world of today bears little resemblance to that of 1960 even more that of 1903 or 1803 in that the entire pattern of production has changed as new products and methods of making them using new kinds of material and energy appeared, and old ones disappeared. Thus, patterns of resource allocation become radically different over time, the activities and economic ways of life of consecutive generations bear little resemblance to each other, and patterns of consumption include practices and purchases that would be undreamt of by earlier generations. Even in 1960, would many have imagined let alone believed that the desk-top computer would be almost as ubiquitous as the television in the households of a modern economy? Who in the 1930s would have foreseen the role of the television in destroying the cinema industry or would have imagined the effect of the refrigerator on patterns of household living? Few modern homes are lit by coal gas, not so in 1910, a virtually negligible proportion of the population today works directly on the land, not so in 1870, and very few make the trip from Europe to New York by ocean liner, not so in 1920. Indeed, industrial museums proliferate and are an established part of the cultural framework in many advanced economies; and one
should reflect on this as a marker of the nature of capitalism. Less happily, whole regions and cities exist with their economic raison d’être eliminated by the entrepreneurial process; the negative side of restless capitalism is that it is an uncomfortable system in which to live. The record, in this long-term perspective, appears to be one of radical discontinuity such that any comparison of a single economy over extended time is fraught with difficulty. Growth never happens without development and the ongoing radical redevelopment of the economic structure so that economic change is always uneven within and between countries. As Simon Kuznets has argued (1977), these economic features partly reflect the role of the scientific revolution as an entirely new engine of economic change. However, we should not lose sight of the fact that scientific work and entrepreneurship are entirely different though complementary and that it is the latter, which gives to science its modern economic significance, not the converse.

However, entrepreneurial activity is not simply about change even in the general sense referred to here. The more important point is that entrepreneurial change refers only to change that arises from within the economic process, change that it is stimulated by and made possible by the institutions of the modern market economy. Change of this kind is a non-equilibrium phenomenon and it cannot be understood by the methods of comparative statics or dynamics, for these always refer to the consequences of changes that arise from without the economic system. This we recognize as Schumpeter’s great insight, that entrepreneurial led change is based on a process of the internal, self-transformation of the economic system. This process may have no attractors of any kind, it may be truly open ended, historical and entirely unpredictable in its effects. To understand the basis for this argument is indeed an enormous challenge but, unless we make the effort, the role of the entrepreneur will remain elusive and worse, marginal to economic thinking. Moreover, we will never come to understand the process of economic development or why it is so unevenly distributed around the globe and thus comprehend the reasons behind several of the major moral issues of our times.

To explore this further we first provide a brief account of the two contrasting theories of economic entrepreneurship associated with Schumpeter and Kirzner respectively. We then turn to the characteristics of modern economic theory, which preclude the inclusion of the entrepreneur, leading to the claim that the root cause of the difficulty is their underlying approach to the nature of knowledge. We conclude, first, with a brief assessment of how the entrepreneur and the manager can jointly contribute to an understanding of restless capitalism, and secondly, with the claim that the entrepreneurial process is an evolutionary process.

Contrasting Theories of the Entrepreneur: Destruction and Creation

Even among economists who recognize the prime importance of the entrepreneur there are contrasting perspectives to be contended with. The best way to illustrate this is to outline the positions of two of the acknowledged dominant figures, Joseph Schumpeter and Israel Kirzner, Austrian economists of very different persuasions. Let us begin with a brief account of Schumpeter’s theory of the entrepreneurial features of capitalism, features that cannot be separated from his theory of innovation and the role
he gives to innovation as the primary internal element in the evolution of capitalism. This summary is drawn from his 1939 *Business Cycles* rather than the more frequently quoted *Theory of Economic Development* although with exceptions noted below the two accounts are very close. The starting point is his claim that innovation is logically separate from invention and that it is entirely immaterial whether innovations involve any element of scientific novelty. Innovation is a purely economic process in terms of cause and effect and involves nothing less than putting available resources to new uses. The important aspect of Schumpeter’s analysis is that it brings together stability in the capitalist order with instability in the capitalist system. The continuous transformations in economic form are associated with the creation and application of new combinations that arise from within the otherwise relatively more stable order of overarching institutions (Schumpeter, 1928). As he expressed the point,

“… what we unscientifically call economic progress means essentially putting productive resources to uses hitherto untried in practice, and withdrawing them from the uses they have served so far” (p. 378, emphasis in original)

Schumpeter’s concept of innovation is supply oriented, consumers are claimed to be passive elements in the innovation process merely adapting to the offers provided by firms. Innovation occurs in the sphere of production and the new combinations that define innovations express themselves in changes in input output relations or in production functions and so redefine cost and productivity relationships. Generally, he argues, this involves the construction of a new plant embodied in a new firm founded for the purpose and the rise to leadership of new ‘men’. Innovations do not typically come from old businesses and when they are associated with established businesses, they involve new forms of internal organization. This process is a competitive process in which old firms either adapt to the new competitive circumstances or decline and die.

The phenomena produced by innovation are quite different from those associated with the growth of population of capital accumulation around existing lines of business activity and cannot be treated as an extension of the accepted theories economic organization, such as those associated with Walras or Marshall. In response to innovation, the most complete command of routine counts for nothing for the effects of innovation are kaleidoscopic, they render existing views of the world redundant. However, the path to entrepreneurship is never easy and three reasons for this are adumbrated, resistance to new phenomena on the part of the threatened parties, difficulty in acquiring resources or changing consumer behaviour, and the human barriers to committing to a new path of behavior. However, once an entrepreneur has shown the way, other less entrepreneurial followers imitate the pioneer and establish a competitive process in which the innovation discovers a niche in the economic framework. The effects of this process are distributed unevenly across the system and over time, in many cases, railroads, electrification are favorite examples, imposing major adaptive responses on the economy so that it becomes a different economy. Disharmony is inherent in the very *modus operandi* of innovation-based evolution, and this cannot be described, let alone understood, in terms of sequences of comparative static adjustments to exogenous changes in economic data.
In Schumpeter’s scheme, enterprise is the activity of carrying out innovations and the individuals who do so are the entrepreneurs. The latter are distinguished from the mere head or manager of a firm and their function is not to be confused with a type of individual. The same individual is typically entrepreneur and non-entrepreneur at different points in her business activity and all he permits himself to add is that entrepreneurs are usually found among the heads or owners of firms, and are often the original founders. Not only is the entrepreneurial function different from the inventive function, neither is it equated with the supply of free capital or the bearing of risk. These may be complementary parts of the innovation process but they are logically separate.

The deeper economic significance of the entrepreneurial process is that it transforms an economy from within, creating a new pattern of relative prices and thus altering the incentive structure facing subsequent entrepreneurs. It is a process that is irreversible, open and path dependent in its effects. Innovations are introduced in the context of a prevailing price structure that validates the innovation in terms of profitability. Of those that pass this test and earn economic profits proper, a process of competitive entry follows which expands supply and destroys the profits as the economy adapts to a new price system. As Schumpeter so graphically expressed the matter, profit ‘is at the same time the child and the victim of development’ (1934, p. 154). Not only are profits uniquely connected to innovation, they also form the principal source of saving and the basis for private family fortunes and the growth of new business dynasties. Entrepreneurial capitalism is clearly an uncomfortable place and it is not surprising that entrepreneurs should seek to protect their profits from the effects of competition and be willing to sabotage the innovative effects of others.

One of the most important and least explored aspects of Schumpeter’s theory is its precise location within the institutions of a monetary economy with its panoply of banks and credit instruments. The entrepreneurial ‘new men’ do not normally own the means of production, the fixed and working capital to establish the enterprise, and so they must turn to the banks to extend credit, often when no collateral exists. The banks must be independent agents without stake in the gains of the enterprise other than those contracted for in the loans granted and it is the existence of the need to finance innovation that makes the interest rate positive. At a minimum innovation is the pillar of interest, it is index of the rate of development after correcting for changes in the general purchasing power of money. That Schumpeter should locate his analysis within the institutions of a monetised, credit economy is of immense importance for it underpins the radical, transformative nature of the entrepreneurial process. Via access to credit, entrepreneurs sidestep the hold on resources of established businesses and are able to prise away those resources and deploy them in the new combinations. It is indeed difficult to see this happening with such ease in a barter economy.

In this sketch of the mature Schumpeter’s view, we find many of the themes that have absorbed the time of subsequent scholars of innovation and the entrepreneur. Entrepreneurial activity is the introduction of novel change into the economy, novel meaning not previously known in that context. More than that, it is intrinsic to the idea of novelty that it cannot be foreseen or reduced to an expression of calculable risk;
hence the view that the entrepreneur deals in radical uncertainty. Since the consequences of novel ideas cannot be predicted in advance, it follows that all entrepreneurial plans are blind variations in Campbell’s sense. To what extent are entrepreneurs different from artists more generally, only in that their conjectures are about business plans. However, there is much more to the entrepreneurial function than having novel thoughts. The entrepreneur must bring the conjecture to fruition in a working business organization for it to be tested by the market, and thoughts must be turned to profitable action if the conjecture is to be of consequence. The entrepreneurial function necessarily extends to the ability to assemble the requisite productive resources, engage with the potential consumers and organize the business. Thus, the idea that what is unique to the entrepreneurial function is business leadership. Here we find the modern emphasis on the new small firm as the prototypical vehicle for entrepreneurial action, and more precisely the new technology based firm. For, if entrepreneurship is equated only with business leadership, all business-founding events fall into the net, yet only a few of them will be transformative in the novel sense that Schumpeter meant. Most will be the continuation or minor imitation of established business ideas necessary to preserve the replication of the existing structure of the economy rather than transform it. From a Schumpeterian perspective, these should be excluded from the ambit of entrepreneurship and leadership. We should conclude not that leadership is irrelevant but rather that it’s only one component in the Schumpeterian view of the entrepreneur. For Schumpeter’s aim was to explain the radical self transformation in the activities and structure of modern capitalist economies as a whole, the entrepreneur as mere business leader does not capture this view at all adequately. There is a further aspect to Schumpeter’s framework, which resonates in the modern world, that of the supply of capital to the prospective entrepreneur; not through the banking system but through capital markets more generally and venture capital markets in particular. The ideas of business angels, of specialized stock markets in which investors can realise their investment exit through an initial public offering, and of corporate venturing by large businesses are newly instituted variations on the Schumpeterian theme that credit markets matter in an experimental economy.

The Schumpeterian perspective on the entrepreneur has provided a compelling framework for many scholars whose central interest is the economics of innovation (Andersen, 1994; Dosi, 2000; Metcalfe, 1998; Nelson and Winter, 1984). However, it is not without its rivals, indeed, an entire School of Austrian inspired thought, associated in particular with Israel Kirzner (1978), stands as a formidable challenge to the innovation based perspective. Whereas Schumpeter gave the entrepreneur a narrow focus, for the Austrians more generally, the entrepreneur is pervasive and fundamental in economic terms, indeed markets cannot work without entrepreneurs. As with Schumpeter there is an emphasis on radical ignorance, a complete unawareness of information that is relevant to choice and action, but the conclusion draw is rather different. What defines entrepreneurship is alertness to situations where resources are under or overvalued. Pace Schumpeter, the entrepreneur does not create economic uncertainty; rather she overcomes the effects of radical ignorance by eliminating market errors. For Kirzner this is the core of the market process. The
limited understanding of individuals, arising from the uneven distribution of economic 
information creates multiple arbitrage opportunities where products and resources are 
incorrectly valued in their current uses. The alert entrepreneur spots these 
opportunities and carries out the steps to eliminate the inconsistencies they imply. 
Thus whereas Schumpeter’s emphasis is upon the disruption to established economic 
practices implied by innovation, for Kirzner, entrepreneurship is a non-innovating, 
cohesive, equilibrating force in whose absence the market economy could not work. 
Profits accrue to the entrepreneur but these cannot be related to the value of any 
resources, instead they are the reward for alertness, for making the correct 
conjectures. It follows that economic equilibrium is the end state in which no 
discoveries remain to be made and this is a highly implausible state of affairs. For 
perfect knowledge is an unattainable situation precisely because learning processes 
are individual and idiosyncratic, they have no collective limit and the context of learning 
is the market process itself. Thus, the entrepreneur as innovator is contrasted with 
entrepreneur as market arbitrager, two quite different takes on what entrepreneurship 
means; if one is destructive, the other is constructive, yet in construction the conditions 
for further destruction are created.

It is easy to overemphasize the differences between these different perspectives, 
perhaps instead we should recognize that any workable notion of entrepreneurship will 
have to cover a spectrum of possibilities. Eliminating unexploited gains from trade in 
the context of existing activities may lack the glamour of the hero entrepreneur, but is 
equally contingent on the exercise of imagination, equally contingent on the ability to 
form conjectures about different possible future economic worlds, equally dependent 
upon a faith in and commitment to non-scientific statements that may turn out to be 
false. Both entail a view of competition as a discovery process that changes the 
discovers. For neither Schumpeter nor Kirzner is entrepreneurship a factor that can 
be supplied in measurable units. It is an attribute of individuals, an attribute of 
and knowledge (Ripsas, 1998). 
Finally, they share a common perspective of fundamental importance, the 
experimenting nature of the economic process. More than anything else, 
entrepreneurs are the creators of new economic experiments and it is this aspect that 
enables us to identify the two dimensions of entrepreneurship which make it fit so 
uncomfortably with modern economic theory, namely its relation to the growth of 
knowledge, and, the impossibility of fitting it within a equilibrium framework of 

Discovery and Knowledge

What is unique about each entrepreneur is that she has perceived a different view 
of the world, a view that is the basis for differential economic action. Entrepreneurs 
believe something that nobody else believes, and do so with sufficient strength of mind 
to act upon the belief and commit economic resources to a business plan. This belief 
must be grounded in the understanding of the individual concerned and this 
understanding must be grounded in that individuals’ knowledge of the existing 

economic world. To say that the entrepreneur is blind to the consequences of action is 
not at all the same as saying that the entrepreneur acts randomly. Quite the contrary,
for the reasons adumbrated above, entrepreneurs are guided by the market system in respect of the innovations they propose. All knowledge is, of course, entirely private, it only exists in the form of electro-chemical states in individual minds and brains. Knowledge never appears in the public domain it is always in this sense entirely tacit and private. What is in the public domain is the representation of that knowledge, almost certainly imperfect, in the form of information whether verbal, sensual or codified in storable written form. That information can be codified and that we, as a civilization, have developed sophisticated languages, including mathematics, to code and decode information is, of course, a central fact in the development of modern entrepreneurial society. A growing body of public information has been made available that is storable across time and transferable across space and thus available for the use of future generations and generations in different locations. The growth in this stock of information opens up enormous opportunities for the combination of different pieces of information and thus for the growth of new knowledge in individual minds. Indeed, the significance of this distinction between information and knowledge is fundamental to the growth of the latter. Knowledge always grows through thought experiment in individual minds but this process is greatly influenced by the information to which those minds have access too. The growth in the availability of stored information greatly enriches this process of knowledge growth but is itself insufficient to comprehend the dynamic of the process. What social and economic life in general depends upon is the emergence of correlated knowledge, more safely correlated understanding, across individual minds. Only when individuals understand in common can they act in common. Thus the emergence of social rules, of theories of public action, of theories of nature, of theories of technology, has been central to modern economic growth, as explained above. Every economy depends on high if localized levels of correlation of understanding, exactly as Adam Smith described in his account of the division of labour. Modern societies devote significant resources to the process of correlating understanding through education and of reinforcing these correlations through ideas of law and acceptable rules of behaviour. However, a world in which every individual new the same as any other individual would be a world of stationary knowledge. Indeed, it would not be a world in which individuality could be given any substantive meaning. Knowledge grows because it is individually grounded, because individuals react differently to the same information and transmit the new thoughts to others in a continuous process of communication and challenge. Out of this process comes understanding in common, correlated knowledge, of which the processes that generate science are typical examples. Now the chief characteristic of the Schumpeterian entrepreneur, in science as in economic life, is to de-correlate private knowledge, to sow doubt where previously there was understanding in common. Hence, the emphasis on novelty, on challenging existing practices and understandings that is typical of the Schumpeterian model and typical of the Kuhnian notion of the paradigm- breaking scientist. The role of the swarm of imitators, and of the Kirznerian entrepreneur, is to reestablish a sufficient degree of correlated understanding around the new activity to ensure its spread into the economic system as the appropriate niche is discovered. Thus, entrepreneurs have a dual role. They claim to know differently from others and they challenge the correlated understanding that others possess. The
successful among them generate new patterns of understanding in the use of resources, pattern changes that underpin economic growth. In this regard, there can be no more unfortunate idea in economics than that of knowledge as a public good. Information is a public good but knowledge is always private. It is on this distinction that an understanding of the entrepreneur rests, as the individual who dares to have thoughts not held by others, who challenges the basis of their economic and social cooperation. No wonder they are rarely thanked for their pains.

That the entrepreneur is the locus of experimentation in the generation of new knowledge also helps explain the restless nature of modern capitalism. Economies can never be at rest because knowledge is never at rest and the prevailing pattern of understanding is always being subjected to challenge. By acting entrepreneurially, an individual generates new information that may lead others to see the world differently in a distributed process of knowledge growth. What is distinctive about modern society is its institutionalization of this process of repeated challenge to existing patterns of knowledge correlation (Gibbons et al., 1994). Of course, all economies are knowledge and information economies and could not be otherwise. What is distinctive about modern times is not only the development of social technologies to correlate understanding but the substantial investment in physical technologies to store and communicate information, greatly widening the number of individuals who can fish in the common pool. In such conditions, contemporary views of the world are challenged on a widespread basis and one would expect the number of entrepreneurs to be increased substantially as a result. The disruption of existing economic arrangements is thus built into modern capitalism in a fundamental way. In part through the growth of science but more fundamentally, through the operation of the market process itself. An explanation of this point requires some further elaboration of current trends in economics.

The Market Process

The famous definition of economic theory provided by Lionel Robbins (1932), that it is a set of principles to govern the disposition of scarce resources to the satisfaction of unlimited ends, turns out to leave no room for the entrepreneur. In part, this is a result of the associated emphasis on rational calculation in known circumstances but much more fundamentally, it is because of the role that the idea of equilibrium plays in this scheme of thought.

When resources, the preferences of final consumers, and the available productive and organizational knowledge are given, a set of prices are identified that permit all individuals and co-operating teams to fulfill their plans to buy and sell inputs and outputs to the letter. Such an outcome is defined as, a market equilibrium relative to the determining data. Now as Baumol (1968) made clear, such a framework has no room for the entrepreneurial function; what it needs is management, the husbanding of the scarce resources in the most economically efficient way as determined by market price signals. Management makes routine decisions within known constraints to meet established objectives, it involves the stewardship of the resources owned or contractually controlled by the firm by the firm, and the managers are rewarded according to the value of the productive services they provide, just like any other form
of labour. The managerial function is primarily one of rational calculation of the course of action that meets the objectives of the owners of the firm, usually assumed to be the maximization of profits or residual income and to implement policies to achieve this. Clearly, the constraints and objectives considered by managers must be known with sufficient precision to permit these Olympian calculations. Management is quite consistent with the search for incremental improvements in economic efficiency, in response to changes in the economic environment but these responses are passive as distinct from initiatory, they involve mechanical application of established rules to already established activity. A very considerable portion of modern economic theory replicates this view, however sophisticated the argument may be, the fundamental frame is one of rational optimization in the presence of given constraints or given constraints generating constraints, and adaptation to impose a new optimum when these constraints change. In this scheme, there can be no problem of knowledge per se. From this perspective, the managerial function is everything that entrepreneurship is not. It takes the frame of action as given, and its task is to reduce uncertainty to calculable risk (Schon, 1965). In fact, we can go further, the structure of this kind of economic theory rules out any consideration of the entrepreneur as a matter of its logical structure.

The root cause of the difficulty is the notion that markets are in equilibrium in the sense that there is no internally generated scope for change, from which follows the necessity of explaining all economic change by exogenous changes in preferences or resources or technology. If equilibrium means a state of rest relative to the given data, then all change is without an economic explanation, for if decisions are correct and mutually consistent there can be no internal reason to change them. If this is the core of the theory of market equilibrium, we must immediately recognize it as fundamentally different from the theory of the market process. In the Schumpeterian and Austrian perspectives, markets do not generate equilibrium they generate order, they solve a problem that of allocating resources to meet needs but that order necessarily generates its own internal reasons to change. All patterns of order in a modern, entrepreneurial economy are necessarily transient, they are continually destroyed from within, they are naturally restless. This change in view is not a matter of semantics but a fundamental difference in perspective and understanding of the underpinnings of economic activity; an understanding of the role that the entrepreneur plays in bringing new knowledge into the economic process. Order, a coherent economic structure that 'solves' the resource allocation problem more or less satisfactorily, is not equilibrium because every economic order necessarily generates the means to change that order and does so from within by the creation of new knowledge and the stimuli this gives to new business conjectures. Order is the solution to a problem that in its emergence changes the problem. The day today flow of economic activity necessarily generates flows of new information, which influences the minds of countless individuals, some of whom are then stimulated to conjecture new economic arrangements. Those who are able to act on these conjectures are acting entrepreneurially and their actions change yet again the flow of information generated within the economic process. This is why economic change is fundamentally endogenous. To claim that a market or an economy is in equilibrium, would be to claim that no new conjectures where
forthcoming, that new thoughts had ceased to flow everywhere in the economy, that from the epistemological viewpoint the system was perfectly correlated and dead. Thus the fundamental problem; economic order is economic equilibrium only when it is assumed that knowledge is stationary, or when we abstract the economic process for its epistemological underpinnings. To do so is to disassociate the economic process from the nature of human kind and if we do this, we should not be surprised if the entrepreneur and the associated problems of profits, losses, hopes and disappointments, growth and decline disappear from view. This is the force of the claim above that all economies are knowledge-based economies and could not be otherwise and that knowledge is never, nor ever could be, stationary. This is the essential point about entrepreneurial activity, it reflects the fundamental nature of human knowledge and the consequence that economic knowledge does not exist separately from an economy. From our evolutionary perspective knowledge and the economy are mutually constituted and they co-evolve.

This confusion between order and equilibrium is undoubtedly grounded in the belief that allocation has a rational, constrained means unlimited ends explanation. Brian Loasby (1998) has captured this point with his usual perspicacity, when he points out that discretionary behavior is essential to innovation. We cannot allow for the entrepreneur if we seek to pre-programme choice in its entirety. Then there is only the rational, mechanical response, no role for imagining different economic worlds and no escape from the tyranny of optimization. This does not mean that calculation is irrelevant only that the choices and the constraints are not always obvious or perceived in the same way by different individuals. From an evolutionary perspective, what matters is not optimization per se but differential optimizations in similar circumstances. In short we can find a place for the entrepreneur only if we see economic order as a lived experience in which flows of information are generated to confirm or challenge existing beliefs and thus to change knowledge and its distribution.

The tendency of modern economics to ignore this perspective is reflected in another of its methodological dimensions the resort to the representative agent as the embodiment of all that is necessary to define an economic equilibrium. It goes without saying that this device eliminates the possibility of the entrepreneur at a stroke, since to act entrepreneurially is to engage in novel economic action, action that is necessarily non-representative. Quite obviously, innovation of any kind is impossible to imagine in such a scheme. To incorporate the entrepreneur is to recognize the immense diversity that characterizes economic action. Such diversity can be captured, as Alchian (1950) suggested, in a statistic such as the mean, median of mode of the relevant distributions of behaviour but, the point is, such representative statistics cannot be defined ex ante, they are the emergent outcomes of the economic process. Thus, equilibrium and the representative agent are two of a kind they are used because the theories in which they are embedded have no role for internally driven change, no role for the entrepreneur, no role for the embedded growth of knowledge.

These difficulties are amplified in a third area, that of an analysis of the path to equilibrium following some exogenous changes in data, the material of many an undergraduate exercise. Here it is essential to know whether the system in view is stable or not, if disturbed will it follow a path to a new state of rest. Two problems
immediately arise. The lesser of the two is that the theory of rational behaviour that defines an equilibrium does not carry over to explain how the agents in the economy respond to being out of equilibrium. The speed of response to out of equilibrium circumstances is in this sense arbitrary, it has no rationalization in the underlying theory. Nor can it, this is the nature of an equilibrium theory. Kirzner understood this well and we have seen that his class of entrepreneurial theory is designed to explain how out of equilibrium situations are acted on entrepreneurially. However, limited this explanation might be it does deal with the latent schizophrenia that results from otherwise rational individuals following non-rational adjustment processes. Kirzner's entrepreneurs are rational, not in that they maximize in a narrow sense but that they are alert to profit opportunities. The second difficulty is more fundamental, and it concerns the assumption that the position of equilibrium is invariant to any non-equilibrium motion around it. How can this be? Surely, only if the experience of non-equilibrium situations conveys no new information to the market participants, that is to say, only if we again and quite unjustifiably, separate the generation of knowledge from the economic process. As soon as this assumption is dropped, we must recognize that all market orders are path dependent and indeed the possibility that the evolution of the market order is entirely open ended. There may be no economic attractors for the very process of approaching them will destroy them. Only history and motion remain but always in the context of market order.

Managers and Entrepreneurs

This is a useful point to dwell a little further on the distinction drawn above between entrepreneurs and managers, particularly in view of the possibility that the manager can live quite comfortably in an equilibrium world whereas the entrepreneur cannot. While it is essential to separate the two categories of entrepreneur and manager as functions, in reality it is difficult to do and risks obscuring the importance of different kinds of entrepreneurship and of disconnecting the firm from the knowledge through which it is constituted. Thus when Baird (1994) defines the entrepreneur as ‘a person who assembles all the resources physically necessary for the production of a good which he then resells to consumers’ (p. 144), this risks equating entrepreneurship with management tout court. Not surprisingly, the demarcation of the two activities has been contested terrain.

Hartmann (1959), for example, argued that entrepreneurship is a type of management that it is pervasive and, pace Schumpeter, it cannot be equated solely with the introduction of innovations in the economy. As a species of management within organizations, its distinguishing characteristic is leadership, the making of decisions of strategic importance. What distinguishes the manager with entrepreneurial attributes is its possession of formal, non-functional, ultimate authority associated with the performance of non-routine activities. Here there is a close connection with the Weberian idea of bureaucratic leadership in which authority is linked to charisma, a particular skill at leadership and the motivation of others. In turn, authority is linked to broader cultural traditions including the acceptance of rights in private property. From this perspective, entrepreneurship is distributed through the higher echelons of an organization and is effectively equated with discretionary
behaviour to instigate processes of change and set new goals in the organization rather than organize established activity. In this view, there is considerable overlap with Eliasson’s idea (1990) of the top management team as the locus of entrepreneurial activity. It is the top team that enjoys discretionary behaviour to create the templates of rules that others in the firm must work too. Ulrich Witt (1998) has also argued that the entrepreneur’s role is to generate a different model of business and to have the leadership skills to ensure that the other members of the firm internalize the model as their correlated framework for understanding. An entrepreneurial theory of the firm presupposes organization but also a sense of purpose and motivation, leadership and charisma for short, not only routines but a conceptual framework in which the business opportunity can be developed further. As Witt rightly suggests, entrepreneurship must be understood in the context of bounded rationality to reflect the judgmental nature of entrepreneurial beliefs and the limiting effect of cognitive frames and their filter effects on information (Fransman 1994). Members of the firm have to coordinate their actions and this requires a correlated degree of understanding. Not everybody need understand everything that happens in the firm, indeed such a requirement would prevent a division of labour, but these happenings must be connected, again through the role of the top management team. As in the economy more widely, so in the firm, knowledge is not the preserve of anyone individual but of the group that defines as the firm. How to use widely dispersed knowledge reflects the organization as a distributed knowledge system (Tsoukas, 1996). Now the correlation of knowledge and beliefs is a social process, by interacting and observing others by sharing experiences together coordinated, ordered action is made possible. Thus, we may see the organization of the firm as the operator that simultaneously ensures managerial correlation of understanding across its activities while leaving open the possibility of entrepreneurial action to de-correlate those understandings. Not surprisingly, this is exactly the function of the market system as a whole, to permit evolution within order. The higher order correlation required for management requires a shared cognitive frame, the top cognitive frame that must encompass the business plan in all its dimensions. Yet any frame is a set of blinkers too that limits the scope for new thoughts and beliefs. Hence, one of the central problems faced by any firm how to frame its activities efficiently and effectively while permitting flexibility to external pressures and simultaneously being open to entrepreneurial conjectures. Thus, just as entrepreneurship and the market process are complements so are entrepreneurs and managers. From this follows the difficulty of seeing the entrepreneur as an ideal type embodying unique traits, the importance of placing the entrepreneur in social and organisational context, and the need to understand the trade offs and incentives that result in managerial or entrepreneurial action from the same individuals (Thornton, 1999)

If we take this view of entrepreneurship, what view of the firm follows to parallel the view of the market? As a starting point, it is surely clear that firm and market are not substitutes but complements, and that firms can achieve outcomes that are entirely beyond the scope of markets. Markets are about processes of exchange but firms are about the combination of resources for specific productive purposes. The firm is more than an allocating device, it is the locus of decision about what to do and has the
unique role of defining and combining the multiple kinds of knowledge required to fulfill the productive function. Thus, firms have to combine knowledge and resources having first made a decision as to what it is that is to be produced. It is simply an error to imagine that markets can do the same. What is specifically important about the entrepreneur is the vision of new resource combinations and the capacity to articulate such visions in practice through the creation of a productive organization, drawing on markets as necessary. Thus, as Schumpeter argued, and resource based theorists have subsequently elaborated (Alvarez and Busenitz, 2001), innovations require new combinations of resources, the creation of additional heterogeneity in the economy. Edith Penrose (1961) still provides the best line of advance for this way of thinking about the firm with the view that the managerial team in solving its current problems gains new knowledge and insight from which it may define new opportunities to occupy its attention. Thus, the services of the team are simultaneously managerial and entrepreneurial, both concepts are needed to understand the development of the firm and the productive services that are derived from the bundles of resources under the control of the firm.

The Evolutionary Connection

We have given several hints already that the entrepreneur is essential to the process of economic evolution. In concluding, I want to amplify this theme as a way of drawing some of the threads together. Schumpeter has the distinction not only of placing the entrepreneur at the center of the process of economic development but of providing a clear articulation of the link between innovation and economic evolution. Innovations are new ways of using and defining resources, they add to the economic variety in the system and the response of the system is the competitive process of growth, decline and structural change. If innovation is variation then competition is selection and both are essential to economic change (Nelson and Winter, 1984; Cohen and Malerba, 2000; Metcalfe, 1998). An entrepreneur does not compete by replicating what rivals do but by being different and having the market assign positive profit to those differences. This is the essential dynamic of economic evolution, it is the economic variety in the system that governs the pace and direction of change. Since the process generates further changes in economic opportunity; we find a place for the Kirznerian idea of the entrepreneur as the agent of the market process, ever alert to new opportunities created by the wider evolution of the system. However, left to itself competition destroys economic variety both absolutely, some activities disappear, and relatively, as some come to dominate their rivals in economic importance. Without some process to regenerate this variety, economic progress would come to an abrupt end. Here we find the importance of the idea of capitalism as an experimental system, a system that has established instituted frameworks of open market and scientific and technological search to regenerate economic variety (Nelson and Winter, 1984). These instituted frameworks define the nature of modern capitalism as a naturally competitive, knowledge-based system and give substance to the idea that economic change is endogenous, that market economies are strongly ordered but never in equilibrium. From this follows our conclusion about the nature of the entrepreneur, as the agent ultimately responsible for changing economic knowledge. In this capacity,
the entrepreneur is both destructive, decorrelating existing knowledge, and constructive, bringing new patterns of resource use into existence through the market process and so correlating new knowledge. Knowledge of science and technology is important for the modern entrepreneur but not in itself sufficient, it must be combined with knowledge of market and organization, and it is this, which makes entrepreneurial insight so valuable.

Undoubtedly the wider conditions which influence the extension of entrepreneurship are of great importance, whether in terms of taxation, access to risk capital, regulations to permit the creation of new businesses and so forth and they define an agenda for entrepreneurial policy. This is the focus of Baumol (1993) when he suggests that policy can influence the payoffs to different kinds of entrepreneurship. However, this may not take us far enough if the question of entrepreneurial opportunity is not addressed. We have suggested that the core of the problem is necessarily defined in relation to the conditions surrounding the creation of new economic knowledge and, while one cannot legislate for creativity, let alone teach it, one can encourage open communication of ideas and the formation of distributed networks of collaborators in the innovation process. This is the great insight contained in the innovation systems literature that innovation and entrepreneurship are subject to the division of labour, and that this division of labour does not occur naturally but must be created to solve entrepreneurial problems (Edquist et al, 2003).

What is our conclusion? Any approach to the study of the economy which is framed in terms of equilibrium will miss the essential point about modern capitalism that it is strongly ordered but restless. As a system it can never be in equilibrium because knowledge can never be in equilibrium. It is because capitalism is intrinsically restless that the standard of living and the very nature of economic and social life now change so rapidly and so unevenly across the globe with consequences that are good and bad. Restless capitalism is necessarily uncomfortable capitalism. To understand its restless nature we need to place the notion of entrepreneurship at the heart of the analysis for the entrepreneur is the crucial agent whose role it is to generate new economic knowledge and thus transform the structure of economic activity. In so doing, new opportunities for entrepreneurial action are created from within the economy. Consequently, the most important aspect of modern capitalism is that just as knowledge creates further knowledge so entrepreneurship creates further entrepreneurship through the institutions of the market economy. That is why economic evolution is necessarily endogenous and could not be otherwise, and why market, firm, competitive process and entrepreneur are indissolubly linked.
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