ENTREPRENEURSHIP IN ECONOMIC THEORY*

By William J. Baumol
Princeton University

The entrepreneur is at the same time one of the most intriguing and one of the most elusive characters in the cast that constitutes the subject of economic analysis. He has long been recognized as the apex of the hierarchy that determines the behavior of the firm and thereby bears a heavy responsibility for the vitality of the free enterprise society. In the writings of the classical economist his appearance was frequent, though he remained a shadowy entity without clearly defined form and function. Only Schumpeter and, to some degree, Professor Knight succeeded in infusing him with life and in assigning to him a specific area of activity to any extent commensurate with his acknowledged importance.

In more recent years, while the facts have apparently underscored the significance of his role, he has at the same time virtually disappeared from the theoretical literature. And, as we will see, while some recent theoretical writings seem at first glance to offer a convenient place for an analysis of his activities, closer inspection indicates that on this score matters have not really improved substantially.

This paper will undertake to examine three major matters. First, I will review briefly the grounds on which entrepreneurship should concern us. Second. I will seek to explain why economic theory has failed to develop an illuminating formal analysis of entrepreneurship and I shall conclude that it is unlikely to do so for the foreseeable future. Finally, I shall argue that theory can say a great deal that is highly relevant to the subject of entrepreneurship even if it fails to provide a rigorous analysis of the behavior of the entrepreneur or of the supply of entrepreneurship.

Before proceeding with the discussion I would like to make a distinction that is somewhat artificial but nevertheless important. It is necessary for us to differentiate between the entrepreneurial and the managerial functions. We may define the manager to be the individual who oversees the ongoing efficiency of continuing processes. It is his task to see that available processes and techniques are combined in proportions appropriate for current output levels and for the future outputs that are already in prospect. He sees to it that inputs are not wasted, that

* The author would like very much to thank his colleague W. A. Lewis, whose comments were used liberally in the revision of this paper. He must also thank the National Science Foundation whose grant greatly facilitated the completion of this paper.

schedules and contracts are met, he makes routine pricing and advertising outlay decisions, etc., etc. In sum, he takes charge of the activities and decisions encompassed in our traditional models.

The preceding description is not intended to denigrate the importance of managerial activity or to imply that it is without significant difficulties. Carl Kaysen has remarked that in practice most firms no doubt find themselves in a position well inside their production possibility loci and one of their most challenging tasks is to find ways of approaching those loci more closely; i.e., of increasing their efficiency even within the limits of known technology. This is presumably part of the job of the manager who is constantly on the lookout for means to save a little here and to squeeze a bit more there. But for many purposes the standard models would appear to provide an adequate description of the functions of the manager. Given an arrangement which calculation, experience, or judgment indicate to constitute a reasonable approximation to the current optimum, it is the manager's task to see that this arrangement is in fact instituted to a reasonable degree of approximation.

The entrepreneur (whether or not he in fact also doubles as a manager) has a different function. It is his job to locate new ideas and to put them into effect. He must lead, perhaps even inspire; he cannot allow things to get into a rut and for him today's practice is never good enough for tomorrow. In short, he is the Schumpeterian innovator and some more. He is the individual who exercises what in the business literature is called "leadership." And it is he who is virtually absent from the received theory of the firm.

I. *On the Significance of the Entrepreneur*

If we are interested in explaining what Haavelmo has described as the "really big dissimilarities in economic life," we must be prepared to concern ourselves with entrepreneurship. For the really big differences are most usually those that correspond to historical developments over long periods of time or to the comparative states of various economies, notably those of the developed and the underdeveloped areas.

It has long been recognized that the entrepreneurial function is a vital component in the process of economic growth. Recent empirical evidence and the lessons of experience both seem to confirm this view. For example, some empirical studies on the nature of the production function have concluded that capital accumulation and expansion of the labor force leave unexplained a very substantial proportion of the historical growth of the nation's output. Thus, in a well-known paper, Solow [6, p. 320] has suggested on the basis of American data for the period 1909–49 that "gross output per man-hour doubled over the interval, with 87½ percent of the increase attributable to technical change and the remaining 12½ percent to increase in the use of capital."[1] But any such innovation, whether it is purely technological or it consists in a modification in the way in which an industry is organized, will require entrepreneurial initiative in its introduction. Thus we are led to suspect that by ignoring the entrepreneur we are prevented from accounting fully for a very substantial proportion of our historic growth.

Those who have concerned themselves with development policy have apparently been driven to similar conclusions. If we seek to explain the success of those economies which have managed to grow significantly with those that have remained relatively stagnant, we find it difficult to do so without taking into consideration differences in the availability of entrepreneurial talent and in the motivational mechanism which drives them on. A substantial proportion of the energies of those who design plans to stimulate development has been devoted to the provision of means whereby entrepreneurs can be trained and encouraged.

The entrepreneur is present in institutional and applied discussions of a number of other economic areas. For example, his absence is sometimes cited as a significant source of the difficulties of a declining industry, and a balance-of-payments crisis is sometimes discussed in similar terms. Thus both macro problems and micro problems offer a substantial place for him in their analysis. Whether or not he is assigned the starring role he would appear in practice to be no minor character.

II. *The Entrepreneur in Formal Models*

Contrast all this with the entrepreneur's place in the formal theory. Look for him in the index of some of the most noted of recent writings on value theory, in neoclassical[2] or activity analysis models of the firm. The references are scanty and more often they are totally absent. The theoretical firm is entrepreneurless—the Prince of Denmark has been expunged from the discussion of *Hamlet.*

It is not difficult to explain his absence. Consider the nature of the model of the firm. In its simplest form (and in this respect we shall see that the more complex and more sophisticated models are no better) the theoretical firm must choose among alternative values for a small number of rather well-defined variables: price, output, perhaps adver-

[1] Solow's result and other similar conclusions have recently been challenged in an article by Jorgenson and Griliches [3]. However, their contention does not necessarily imply any denigration of the role of the entrepreneur. They argue merely that entrepreneurship and innovation have achieved growth in outputs only with the aid of corresponding increases in input quantities.

[2] There is one residual and rather curious role left to the entrepreneur in the neoclassical model. He is the indivisible and non-replicable input that accounts for the U-shaped cost curve of a firm whose production function is linear and homogeneous. How the mighty have fallen!

tising outlay. In making this choice management is taken to consider the costs and revenues associated with each candidate set of values, as described by the relevant functional relationships, equations, and inequalities. Explicitly or implicitly the firm is then taken to perform a mathematical calculation which yields optimal (i.e., profit maximizing) values for all of its decision variables and it is these values which the theory assumes to be chosen—which are taken to constitute the business decision. There matters rest, forever or until exogenous forces lead to an autonomous change in the environment. Until there is such a shift in one of the relationships that define the problem, the firm is taken to replicate precisely its previous decisions, day after day, year after year.

Obviously, the entrepreneur has been read out of the model. There is no room for enterprise or initiative. The management group becomes a passive calculator that reacts mechanically to changes imposed on it by fortuitous external developments over which it does not exert, and does not even attempt to exert, any influence. One hears of no clever ruses, ingenious schemes, brilliant innovations, of no charisma or of any of the other stuff of which outstanding entrepreneurship is made; one does not hear of them because there is no way in which they can fit into the model.[3]

It must be understood clearly that what I have been saying constitutes no criticism, not even an attempt to reprove mildly the neoclassical model of the firm. I think that model does what it was designed to do and does it well. Like any respectable analysis, one hopes that it will be modified, amended, and improved with time. But not because it cannot handle an issue for which it is irrelevant. The model is essentially an instrument of optimality analysis of well-defined problems, and it is precisely such (very real and important) problems which need no entrepreneur for their solution.

Some readers may suspect that I am subtly putting forward as more appropriate candidates for the job some alternative models of the firm with which I have to some degree been associated. But this is certainly not my intention, because it seems clear to me that these models are

[3] The problem was recognized long ago by Thorstein Veblen. One may recall the characteristic passage in which he described the economic man as "a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact. He has neither antecedent nor consequent. He is an isolated, definitive human datum, in stable equilibrium except for the buffets of impinging forces that displace him in one direction or another. Self-imposed in elemental space, he spins symmetrically about his own spiritual axis until the parallelogram of forces bears down upon him, whereupon he follows the line of the resultant. When the force of the impact is spent, he comes to rest, a self-contained globule of desire as before. . . . [he] is not a prime mover. He is not the seat of a process of living, except in the sense that he is subject to a series of permutations enforced upon him by circumstances external and alien to him" [7, pp. 73–74].

no better for the purpose than the most hidebound of conventional constructs. For example, consider what Oliver Williamson has described as the "managerial discretion models," in which the businessman is taken to maximize the number of persons he employs, or sales, or still another objective distinct from profits. True, this businessman has (somewhere outside the confines of the model) made a choice which was no mere matter of calculation. He has decided, in at least some sense, to assign priority to some goal other than profit. But having made this choice he becomes, no less than the profit maximizer, a calculating robot, a programmed mechanical component in the automatic system that constitutes the firm. He makes and enforces the maximizing decision and in this the choice of maximand makes no difference.

Nor can the "practical pertinence" of the decision variables make the difference in carving out a place for the entrepreneur. Maximization models have recently been developed in which, instead of prices and outputs, the decision variables are the firm's real investment program, or its financial mix (the proportion of equity and debt in its funding), or the attributes of a new product to be launched by the company. These decisions seem to smell more of the ingredients of entrepreneurship. But though the models may be powerful and serve their objective well, they take us not a whit further in the analysis of entrepreneurship, for their calculations are again mechanistic and automatic and call for no display of entrepreneurial initiative.

Finally, it must be understood that the timeless nature of these models has nothing to do with the problem. Professor Evans [2] long ago developed a model in which the firm considered the consequence of its decisions for the time path of prices and where the calculus of variations served as his instrument of analysis. In one of my own models the firm was taken to choose not a stationary, once-and-for-all output level, but selected instead an optimal growth rate. None of these alternatives helps matters. In all these models, automaton maximizers the businessmen are and automaton maximizers they remain.

And this shows us why our body of theory, as it has developed, offers us no promise of being able to deal effectively with a description and analysis of the entrepreneurial function. For maximization and minimization have constituted the foundation of our theory, and as a result of this very fact the theory is deprived of the ability to provide an analysis of entrepreneurship. The terminology of game theory has been extremely suggestive; the willingness of the behaviorists to break away from traditional formulations has been encouraging; but I see no real breakthroughs in this area even on the distant horizon. At most I hope for more brilliant observations and descriptive insights such as those provided by Schumpeter and more recently by Leibenstein, but I foresee for the immediate future no more formal, manipulatable engine of calculation and analysis.[4]

III. *On the Supply of Entrepreneurship*

There is yet another reason why a marriage between theory and policy is not easily arranged in this area. In its discussions of inputs our formal analysis deals, by and large, with the way in which these inputs are used, and tells us relatively little about where they come from. In our growth models, for example, the behavior of the labor supply exerts a critical influence on the economy's expansion path. But the determination of the growth of the labor force itself is generally taken to be an exogenous matter. Similarly, in a neoclassical or a programming analysis of production one investigates how inputs should be used in the production process, but one assumes that their supply is somehow determined outside the system. Thus even if we were to develop a model which were successful in advancing the theory of entrepreneurship to the level of sophistication of our treatment of other inputs, we would have defined more effectively the entrepreneurial role, but we would have added relatively little to our understanding of the determinants of the level of output of entrepreneurship.

From the point of view of policy, however, the priorities would seem to be reversed. The first order of business in an economy which exhibits very little business drive is presumably to induce the appearance of increased supplies of entrepreneurial skills which would then be let loose upon the area's industry. The policy-maker thus is interested primarily in what determines the supply of entrepreneurship and in the means that can be used to expand it.

But there is reason to suppose that these issues are to a very considerable extent matters of social psychology, of social arrangements, of cultural developments and the like. And perhaps this is why many of the recent discussions of the theory of entrepreneurship have been contributed by the sociologists and the psychologists.[5] This may then be no

[4] My colleague, Professor Lewis, has adduced yet another reason why the current theory does not help us to understand the entrepreneur. He remarks in a note to me that "the entrepreneur is doing something new and is therefore to some extent a monopolist. . . . We have no good theory of entrepreneurship because we have no good theory of monopoly. Our theory that monopolists [act] to maximize profit is obviously absurd, given the low elasticity of demand of most monopolized products." I agree that this observation points to a most fundamental gap in the theory of the firm.

[5] For a remarkable study of entrepreneurship by a social psychologist, see McClelland [4]. While the book is not free of somewhat distracting jargon, and is naïve in spots, particularly in its literal interpretation of the role of the profit motive in economic analysis, it does offer a number of extremely interesting hypotheses and provides in their support quantities of psychological test results relating to a great variety of cultures. In what is perhaps the most interesting part of his discussion from our point of view, the author claims to show that entrepreneurs are motivated by *n*-achievement (the need for achievement) and not by desire for money (pp. 233–37). In his tests, people with high levels of *n*-achievement do no better when offered larger

fortuitous development. The very nature of the more pressing issues relating to entrepreneurship may invite more directly the attention of the practitioners of disciplines other than theoretical economics.

IV. *A Place for Theory and Entrepreneurship*

Given these difficulties besetting any attempt to construct a relevant economic theory in the area, I can offer only one suggestion for a theoretical approach to entrepreneurship, but one which I think is not without promise. We may not be able to analyze in detail the supply of entrepreneurship, the entrepreneur's strategy choices, his attitudes to risk, or the sources of his ideas. But one can hope to examine fruitfully what can be done to encourage his activity. Here an analogy is illuminating. The Keynesian analysis really bypasses the issue of expectations which is surely at the heart of the investment decision and yet the model succeeds in coming to grips with some means that can stimulate investment. In the same way one can undertake to grapple, assisted by theoretical instruments, with the policies that encourage entrepreneurship.

This can be done by considering not the means which the entrepreneur employs or the process whereby he arrives at his decisions but by examining instead the determinants of the payoff to his activity.[6] In his operations he must bear risks, never mind just how he does this, but let the theory consider how the marginal costs of his risk bearing can be reduced. He employs the results of work in research and development; very well, let us investigate what means make it easier, economically, to undertake R and D. Theoretical analysis of the effects of alternative tax arrangements, for example, should shed some light on these matters. The role of the structure of interest rates is no doubt also pertinent and we do have a powerful body of literature which treats of

amounts of money for success, whereas people with low *n*-achievement scores do much better when offered money. However, it should be noted that while a rise in absolute income levels does not seem to stimulate *n*-achievers, a rise in marginal returns does seem likely to spur them on, according to the author because it provides a clearer measure of accomplishment. (The economist would no doubt propose a different explanation.) He also claims to show that *n*-achievers choose smaller risks than the average man: they are not gamblers, but are calculators and planners. The entrepreneur is not essentially a man who chooses to bear risks—that is the speculator, a man with quite a different personality (pp. 210–25). Another interesting McClelland claim is that the *n*-achiever is not an individualist and does not depend for his success on private enterprise (pp. 292–300). He gets just as much satisfaction from the manipulation of a committee, or from working for a government, since his interest is in results rather than in these other considerations. This is perhaps the reason huge committee-run corporations can be successful.

[6] I believe the key element of Schumpeter's contribution to the theory of entrepreneurship is precisely of this variety. In its discussion of the functions of the entrepreneur, *The Theory of Economic Development* [5] offers us little more than a taxonomy. But enormous illumination is provided by Schumpeter's analysis of the process whereby the rewards of innovation are only gradually eroded by the competitive process and the corollary observation that some imperfection in the market mechanism is essential to permit some financial reward for innovation.

these matters. On all of these fronts analysis is well advanced and it is no heroic exercise to imagine rather complex and probing theoretical formulations capable of shedding light upon them.

It should be recognized, moreover, that such a theoretical analysis can be of enormous significance for policy. In a growth-conscious world I remain convinced that encouragement of the entrepreneur is the key to the stimulation of growth. The view that this must await the slow and undependable process of change in social and psychological climate is a counsel of despair for which there is little justification. Such a conclusion is analogous to an argument that all we can do to reduce spending in an inflationary period is to hope for a revival of the Prostestant ethic and the attendant acceptance by the general public of the virtues of thrift! Surely we have learned to do better than that, in effect by producing a movement along the relevant functional paths rather than undertaking the more heroic task involved in shifting the relationships. This is precisely why I have just advocated more careful study of the rewards of entrepreneurship. Without awaiting a change in the entrepreneurial drive exhibited in our society, we can try to learn how one can stimulate the volume and intensity of entrepreneurial activity, thus making the most of what is permitted by current mores and attitudes. If the theory succeeds in no more than showing us something about how that can be done,[7] it will have accomplished very much indeed.

[7] For a crude attempt at such an analysis, see the last chapter of [1].

REFERENCES

1. W. J. Baumol, *Business Behavior, Value and Growth* (revised ed., Harcourt, Brace and World, 1967).
2. G. C. Evans, "The Dynamics of Monopoly," *Amer. Math. Monthly*, Feb., 1924, pp. 77–83.
3. D. W. Jorgenson and Z. Griliches, "The Explanation of Productivity Change," *Rev. of Econ. Studies*, July, 1967, pp. 249–83.
4. D. C. McClelland, *The Achieving Society* (Princeton, 1961).
5. J. A. Schumpeter, *The Theory of Economic Development* (Cambridge, Mass., 1936).
6. R. M. Solow, "Technical Change and the Aggregate Production Function," *Rev. of Econ. and Statis.*, Aug., 1957, pp. 312–20.
7. T. B. Veblen, "Economics and Evolution," *The Place of Science in Modern Civilization* (New York, 1919).