Preface

The Entrepreneur in History

Wherefore rejoice? What conquests brings he home?
What tributaries follow him to Rome…?
—*Julius Caesar*, Act 1, Scene 1

The Central Objective of the Book

For readers who are not historians, history can nevertheless make fascinating reading. For one thing, the plots are often more improbable and more daring than a work of fiction. But entertainment is not the purpose of this book. Rather, it was written to investigate several hypotheses that are of considerable importance for the general welfare of society, hypotheses that, unfortunately, resist testing by standard procedures such as statistical analysis or controlled experiment. Only history seems to offer any promise of providing evidence for their verification or rejection.

In brief, the first hypothesis asserts that the practical utilization of inventions and their indispensable contribution to economic growth (at the very least, the rate of such growth and hence the level of per capita income) will be well below the levels they might otherwise have achieved without the intervention of entrepreneurs. But the entrepreneur's contribution is much more than this. If entrepreneurship were just "another factor," far more inventions would have been born to blush unseen. That is, without them, we would have basically nothing of the unprecedented growth miracle of the recent centuries. The second hypothesis goes in a direction rather different from the first. It asserts that entrepreneurial activities are not always productive and growth enhancing. Indeed, they may sometimes sabotage growth and prosperity. The third hypothesis is that the direction taken by entrepreneurial activity depends heavily, at any particular time and in any particular society, on the prevailing institutional arrangements and the relative payoffs they offer to entrepreneurial activities that promote growth and those that do not, or those that even handicap it. The research underlying this book was undertaken out of general interest in the subject, but also with the goal of shedding light on these three hypotheses.

The remainder of this preface will go a bit further in explaining the hypotheses and the reasons why history is the most promising way to test them; that is, why the more standard procedures used in empirical testing are not likely to work in this arena.

Fundamental Differences among Enterprising Activities: The Hypotheses

We consider individuals to be engaged in enterprising activities if they devote their own independent efforts to the acquisition of wealth, power, and prestige. They do not do so as employees of others, and, in the entrepreneurial process, they display initiative to a considerable degree. It seems clear that two primary avenues have been followed in this undertaking, which we label, for convenience, *redistributive entrepreneurship* and *productive entrepreneurship*. Examples of the first are obvious: aggressive warfare, larceny, bribery and rent-seeking litigation, among many others. Here it is important to distinguish between sanctioned or legal forms of redistributions such as lobbying for protective tariffs and unsanctioned ones, such as violent crime. It is practitioners of the former who can prosper and garner respect even in highly organized and "well-governed" societies. And it is to be noted that many such undertakings were once considered commendable and some still are. Indeed, those who undertook some of them were deemed heroic and were celebrated accordingly. A few centuries before the Industrial Revolution, this began to change. In some societies merchants and financiers were already quite appreciated, notably in Florence and Antwerp. The problem was that these societies were typically small and came under pressure from predatory neighbors, a particularly pernicious form of redistribution. Before that period, however, entrepreneurial activity that was both innovative and productive, that is, activity that increased the productive capacity of the economy, seems to have been relatively rare and not highly valued.

Aside from cultural attitudes that valued the successful warrior and looked down upon productive effort, there is another clear reason that favored redistributive undertakings. By its very nature, the payoff to success in redistributive entrepreneurial activity is clear and often immediate. The capture of territory from a rival monarch, the acquisition of a wallet by a pickpocket, or the bribe given to a corrupt bureaucrat are all unambiguous gains to the recipient. This is in marked contrast to the rewards that accrue to the productive entrepreneurs, whose contributions may well have largely accrued to free riders in the past and, indeed, to a considerable extent, still do.[1] To someone who adds to the economy's capacity to produce, the magnitude of the gain is usually far from obvious, nor is the lag entailed easily estimated; moreover, the gainers, who will reap much of the benefit, may not emerge until much later, and even then, their identity may be far from clear. Indeed, if the system works well, a good deal of the gain, and perhaps its preponderance, goes to consumers—often foreigners.

The work of Douglass North indicates that institutional arrangements play a crucial role in determining the structure of payoffs—the relative rewards offered by different entrepreneurial occupations in the society under examination. If North's conclusion is indeed valid, and it seems difficult to believe otherwise, then it follows that those institutions are among the primary influences that determine the allocation of entrepreneurial activity between the redistributive and the productive occupations. It would appear that until about the time of the British industrial revolution the prevailing institutions in most countries and in most periods were such as to favor redistributive activity by the economy's enterprising individuals. The change in the structure of payoffs that emerged with the appearance of capitalism can then plausibly be taken to contribute to the unprecedented growth rates that emerged thereafter. It would appear that never before in history have per capita incomes risen

so quickly for so long a period, and the long era of slow growth surely requires explanation. Astonishing periods of invention were not absent, as we recognize. Then why did productivity and production remain so low and grow so slowly? A central purpose of this book is to shed light on such critical issues—light that can be helpful to today's impoverished economies and can guide the wealthier societies in the future.

But Why a Historical Approach?

It has already been suggested that no source of evidence and analysis other than that offered by study of history is promising for testing of hypotheses against the facts in this arena. It is worth recapitulation of the reasons why this is so. But first it must be emphasized that the obstacles to statistical analysis of matters related to entrepreneurship are easily exaggerated. There has, in fact, recently appeared a rich empirical literature on topics such as the personal characteristics of the entrepreneurs, their activities, their financial needs, their psychological propensities, and their earnings. However, such material has not been used to test hypotheses derived from formal or informal theory, and notably no broad hypotheses about the fundamentals of innovative entrepreneurial behavior and their consequences, such as those that have been proposed above.

The primary reason for the absence of such investigations is the indispensably essential attribute of an invention: it necessarily is something that was never available before. Of course, many if not most innovations are close substitutes for things already on the market. Yes, they are of course heterogeneous, but like snowflakes, even if they are all different we may find it useful to do some kinds of statistical analysis (e.g., on patents, or the biographies of great inventors) to look for empirical regularities. Nevertheless, invention must be the ultimate heterogeneous product. This impedes both standard approaches to statistical analysis: both a time series and a cross-sectional procedure. Or put more generally, the foundation of statistical analysis of relationships is the availability of a sufficient number of homogeneous observations to ensure that any observed interrelationship in the behavior of two such sets has a very low probability of having been fortuitous. But for the behavior of the innovative entrepreneur on the matters here under discussion, such internally comparable data sets are not generally available.

It may be noted that a similar difficulty impedes the optimality analysis that underlies most microeconomic theory, and helps to account for the absence of a formal microtheory of entrepreneurship. An optimality calculation entails at least an implicit comparison among the available choices for the decision at issue, while the innovating entrepreneurs normally deal with no set of well-defined substitutes among which they may choose on the basis of their attributes that are quantifiable and comparable. In contrast, standard theory of the firm analyzes well-defined choices of management among comparable options in fully operational enterprises in which the entrepreneur has already completed his or her job and left to create other firms.

With these impediments to both theory and data analysis, we can only return, without apology, to what we can learn from history. Of course, we are aware of the handicaps with which this option is beset. Most serious of all is the inability to perform anything analogous to a controlled experiment, so that any observed event

or historical period is sure to be governed by complex interactions of a multitude of determinants, thereby preventing anything like direct evaluation of any one of them. Nevertheless, study of history provides much information and insight not otherwise obtainable. Most notably it allows us to look at environments very different from our own and see how these people coped. It is much like paleontology; only a minute fraction of all the interesting species that were ever alive are extant now, so how would we know anything about the physiology of giant lizards or ten-foot sloths? Yet no method in economics is without its shortcomings and impediments, and history has no reason to be deemed an unworthy approach.

Accordingly, this book turns to history, to find out what it can teach us about entrepreneurs, invention and its dissemination and utilization, and their implications for economic growth.

Some Observations That Emerge

The policy designer who reads this book will find a number of lessons that are likely to be helpful in suggesting what institutions and institutional modifications promise to contribute to the general welfare and to invention and innovation. But it can be hoped that the general readers will find much to inform, surprise, and delight them. For example, one conclusion that seems to emerge is that before the modern era the societies that were most creative in the generation of productive inventions were often poor performers in putting them to use. Abraham Lincoln cited the Roman case, with its production of a working steam engine, invented by Heron of Alexandria, and its failure to put the breakthrough to use as anything but a toy. Military inventions were, of course, put to use, and so were gadgets, many contributed by Heron and provided to the Roman priests as means to convince their flocks of their divine powers. Even more striking is Tong and Sung China, with its flood of inventive contributions, the spinning wheel, a magnificent astronomical clock, printing, playing cards, and much more. True, many of the Chinese inventions were put to use, such as printing, spinning, shipbuilding, and hydraulic technology. Yet the institutional arrangements did apparently lead toward a dead-end of sorts. In striking contrast is the much earlier Mesopotamian regime, and that of Europe in the later Middle Ages (notably the twelfth and thirteenth centuries) with its striking architectural inventions and its inventive use of the water mill to—in addition to grinding grain—saw lumber, hammer metal, contribute to the cloth-finishing process, pit olives, and much more, using so many water mills that they blocked traffic on the Seine. Our basic hypotheses would appear to account for this paradox that those who possessed the inventions seemed often to be only moderately capable of putting them to effective work. These hypotheses suggest that the reason for the failures to put inventions to use is that the payoffs were not available there but rather were offered for other things. In all these periods the prime payoff was offered for military invention: better armor, better castle design, and an improved stirrup for the war horse to permit more effective use of the lance. Though it is often argued that there were spillovers or (more persuasively) that the lines between military and civilian technology were more blurred than now, in the sense that iron, horses, construction, hydraulics, and even food preservation were all "common" technologies. In other cases, there was a

payoff from the religious authorities who sought equipment with which to impress their flocks by their magic.

But these remarks, in a similar vein, are offered to induce the prospective reader to read on. For what this preface has offered is only a few samples of the ideas to be found in this book and the insights that it offers.

WILLIAM J. BAUMOL

Note

[1] Thus, Nordhaus has provided spillover calculations that show how little of the efficiency rent goes to innovators: "Using data from the U.S. non-farm business section, I estimate that innovators are able to capture about 2.2 percent of the total surplus from innovation. This number results from a low rate of initial appropriability (estimated to be around 7 percent) along with a high rate of depreciation of Schumpeterian profits (judged to be around 20 percent per year).... the rate of profit on the replacement cost of capital over the 1948–2001 period is estimated to be 0.19 percent per year" (2004, 34).

Reference

Nordhaus, William D. 2004. "Schumpeterian Profits in the American Economy: Theory and Measurement." NBER Working Paper No. 10433, April. Cambridge, MA: National Bureau of Economic Research.