THE INVENTION OF ENTERPRISE

ENTREPRENEURSHIP
FROM ANCIENT MESOPOTAMIA
TO MODERN TIMES

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Chapter 18.

"Useful Knowledge" of Entrepreneurship: Some Implications of the History

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The term "useful knowledge" in the title of our chapter is not meant to imply that the utility of historical study of entrepreneurship is in any sense questionable. Rather, we seek to remind the reader that our orientation in this book mirrors the interest of Ben Franklin, America's first great entrepreneur-inventor, in knowledge that has practical applications. Just as Franklin sought to promote useful knowledge that would improve the quality of life in a new land, so we seek in this book to derive practical lessons regarding entrepreneurship and its relationship to economic growth from the historical accounts in this volume. Indeed, it is our contention that these histories give us much to think about and much to guide those who seek to formulate pertinent policy—policy to encourage economic growth via the use and dissemination of innovation and policy for the containment and even the elimination of poverty. This concluding chapter seeks to extract some of the noteworthy implications that emerge from the material offered by the eminent historians who wrote the earlier chapters of this book.

Before we proceed, a caveat must be brought to the attention of the reader. We must make clear that neither of the authors of this chapter can claim any professional qualifications as economic historians (or as historians of any other stripe). Our comments can only be interpreted as observations of very interested but very amateur onlookers.

We begin this chapter by arguing that history may well provide the most fertile field for the germination and gathering of ideas for policy. Far more than other topics in economics, the study of entrepreneurship must turn to nonstatistical history for the bulk of its evidence. There are essentially three sources of evidence that one can use to analyze an economic activity such as entrepreneurship: statistics, theory, and history. For empirical evidence, as one would expect, economists generally prefer statistics to history. Much as one can learn from historical circumstances and events, they are always complex, and their form and operations are subject to the interactions of an array of multifaceted influences. History offers nothing that resembles the ceteris paribus cleanliness of a controlled experiment.

Yet statistical analysis depends on the availability of a multiplicity of identical items that can be added together, averaged, or correlated with other variables. While
we can calculate the number of laptops of a given model produced by a factory, an R & D establishment's inventions must all be different from one another if they are indeed to qualify as inventions. It is this fundamental heterogeneity that prevents these inventions from being added together or otherwise analyzed statistically. Recent statistical work has certainly offered significant illumination on the realities of entrepreneurship, telling us, for example, a great deal about the earnings of entrepreneurs. But the inherent diversity of the activity and its products remains a daunting obstacle to the econometric approach.

The theoretical approach runs into analogous obstacles. First, standard theory depends heavily on mathematical calculation of optimal decisions. This process is generally possible, however, only when one can deal quantitatively with interrelated variables, such as the amount of electric power and other inputs used and the magnitude of the resulting quantifiable output. For the reasons indicated in the previous paragraph, the fundamental heterogeneity of the entrepreneurship terrain makes this sort of calculation impossible.

Furthermore, the bulk of the useful knowledge contributed by standard microeconomic theory (in contrast to the rapidly expanding macroeconomic growth literature) is stationary in character and focuses on the properties of static equilibria. But such an equilibrium excludes the activities of the innovative entrepreneur, whose role is to bring to market (or to some other place in the economy) something that previously was not there. In the implicit scenario of a static model, the entrepreneur has been replaced by the manager, and the entrepreneur has moved on to bring changes to a new destination.

In short, here, as in few other parts of economics, we are driven to history for insights, despite all of the complexities of the phenomena it reports. It is true that historical analysis draws its inferences from messy examples that bear no resemblance to controlled experiments. Particularly apropos is the old Yiddish proverb, "For example is not a proof." Yet, as a means to consider the validity of hypotheses, it is not as powerless as this adage might seem to imply. A series of examples may not prove convincingly that an inference is true, but we must also recognize the validity of the converse: an example (or, rather, a counterexample) can indeed be a disproof.

This volume, then, seeks to use the study of history to illuminate useful knowledge regarding entrepreneurship and entrepreneurship policy. Each chapter of this volume describes the particularities and idiosyncrasies of entrepreneurship in a single time and place. Taken together, these chapters reveal wide variation, from the features of the economy and the entrepreneurs' status in the society, to the society's institutions and even the nature of entrepreneurial activity in that time and place. A consideration of these chapters also, however, reveals commonalities in the development of a culture of entrepreneurship, the institutions that foster this activity, and the relationship between entrepreneurial activity and economic growth.

These commonalities offer us an opportunity to draw inferences and hypotheses regarding entrepreneurship in our own time. For example, we may consider the evidence provided in the preceding chapters to suggest what inferences one can draw on the pertinence of productive entrepreneurship for economic growth, whether its abundance is indispensable for achievement of that goal, and whether it is very effective in promoting it. And we may review the implications of historical accounts of the influences that promote productive entrepreneurial activity. We must evidently proceed with caution in reliance on history as a guide to policy. The passage of time
changes attitudes, constraining circumstances and even the goals and preferences of the community. Yet, treated with care, history can offer some relevant and valid insights pertinent to current policy issues on which other sources of evidence are scarce or even unavailable.

The Role of Culture in the Activities of the Entrepreneur

It must be recognized that some of the influences we encounter in these historical accounts do not lend themselves to encouragement by policy programs. Historians and others, notably Max Weber, Douglass North, and David Landes, have emphasized the role of religion and of the community's culture more generally, as key determinants of the intensity of that society's productive entrepreneurial activity and the size of its body of entrepreneurs. Many of the contributors to this volume also illustrate this powerful influence of culture on the vigor and character of entrepreneurship activity throughout the course of history.

Religion is perhaps one of the strongest cultural influences on the activities of the entrepreneur throughout history. Max Weber's seminal work, The Protestant Ethic and the Spirit of Capitalism (1904-5), articulates this relationship most memorably, but the authors of this volume also illustrate these effects, going as far back as Mesopotamia. Cornelia Wunsch, for example, articulates the dependence of Mesopotamian society's religious institutions upon economic support from mercantile activities. And both she and Michael Hudson note that this relationship resulted in a society that was considerably more conducive to mercantile entrepreneurship than ancient Greece and Rome. Similarly, Timur Kuran reports that the Muslim religion initially encouraged entrepreneurial activity. While Muhammad's own merchant activities may have led to the approval of entrepreneurial activity in these early years, the religion has since evolved in directions less hospitable to such economic activity. Finally, John Munro discusses the relationship between Protestantism and the origins of modern capitalism and, with Murray, addresses the relationship between the usury doctrine for Protestants and Catholics and entrepreneurship.

John Munro also offers a different perspective on the role of religion on a society's entrepreneurial activity in his illuminating discussion of the very great contribution of the British religious dissenters and the Scots to the outburst of invention that arguably underlay the eighteenth-century Industrial Revolution in the British Isles. Here, as in other arenas such as those encompassing the Huguenots and the Jews, religion fostered entrepreneurial activity not only through the educational activities encouraged by these religious belief systems but also through the religious discrimination and exclusion these religious groups faced from a variety of economic positions.

Other Cultural Influences

While religion clearly plays a powerful role in the encouragement or discouragement of entrepreneurial activity, faith is far from the only cultural influence on entrepreneurship. This volume also describes a profusion of secular cultural influences. Joel Mokyr, for example, discusses the importance of informal institutions (codes of behavior, patterns of beliefs, and trust relations) to entrepreneurship during the Industrial
Revolution in Britain. He suggests that the cultural value placed on trustworthiness among gentlemen was an indispensable requirement for the rise of modern banking, along with such financial instruments as bills of exchange. Trust between gentlemen allowed for transactions with strangers in distant locations, in which the shipper of merchandise trusted the recipient to provide payment and the recipient trusted the shipper to send the promised items. Susan Wolcott also looks at the role of culture in shaping the financial system, focusing on the caste system in India.

There are equally powerful examples of cases in which culture discouraged entrepreneurial activity. The focus on military activity in ancient Rome, for example, meant that the importance and potential of nonmilitary inventions were underestimated. The Romans valued inventions that facilitated the conduct of warfare, including road-building improvements, aqueducts, and advances in the design of weapons, but they (and notably Vitruvius) failed to see the promise of the water mill or the steam engine. Similarly, the opportunities for corruption that plagued the culture of medieval China discouraged entrepreneurship. This corruption, compounded by the growing influence of Buddhism, is held to be responsible, in part, for the Chinese failure to commercialize the profusion of inventions during the Tang and Sung dynasties. Movable type, the blast furnace, the spinning wheel, the wheelbarrow, and the oft-mentioned gunpowder, among others, were effectively allowed to languish.

**Entrepreneurs and Economic Growth: On Definition and Taxonomy**

Culture undoubtedly plays a primary role in the development of an entrepreneurial society and, therefore, in economic growth. As a guide to growth policy, however, such observations are a counsel of despair. We know little about effective ways to influence and modify the culture of a society, and we are in no position, for example, to change a nation's religious beliefs to stimulate economic growth. While illuminating and important, the impact of culture and religion on entrepreneurship cannot be included in the domain of useful knowledge, for there is little or nothing that can be done to modify their current makeup or degree of profusion.

In this recapitulation, then, we will focus on other institutions of the society—those influences that do constitute opportunities for the adoption of programs that encourage growth and attack poverty, even if it can be argued persuasively that their influence is less powerful that that of other variables that resist deliberate modification and, therefore, are absent from our account. Ultimately, we will seek to derive from the studies in this volume what it is possible to deduce from the history about entrepreneurship policy. Given the importance of history to the study of entrepreneurship, the apparent absence of any volumes such as this one represents an important opportunity so far overlooked.

We necessarily begin with a few remarks on terms as they are used here (although other authors may have used them in different ways elsewhere in this book). First and foremost, we see an entrepreneur as anyone who undertakes some economic activity on her own initiative on the basis of alert observation of an opportunity to enhance her wealth, power, or prestige. Particularly in more recent times, this activity most often involves the creation and organization of a new business firm. But the activity did not always take this form and, indeed, does not always assume this form today.
This definition of entrepreneurship, even when limited to the creation of firms, encompasses a wide range of different activities. It is, therefore, useful to divide this activity further into two categories. The first includes all firms that are replicative or engage in activities very similar or identical to those of firms already in place. The creation of yet another retail shoe emporium serves as an excellent example of this type of replicative firm creation. Innovative entrepreneurs, by contrast, create firms that offer new products, use new production processes, enter new markets, or adopt new forms of organization. The innovative entrepreneur's primary role is not invention. Rather, these individuals ensure the utilization of promising inventions by conceptualizing their best use and bringing them to the market.

These entrepreneurs may be further divided into productive entrepreneurs, those who contribute to economic growth, and unproductive entrepreneurs, those who contribute little or nothing to the growth of the economy and sometimes, in fact, detract from it. Perhaps surprisingly, it seems that there is little if any association between replicative entrepreneurship and growth, and that the correlation may even be negative. A plausible explanatory hypothesis is that absence of rapid technical change and the associated growth results in a scarcity of jobs and the resulting unemployed are then forced to open small shops or become itinerant peddlers in order to earn a living.

Innovative entrepreneurship, on the other hand, can be either productive or unproductive. Innovative, unproductive entrepreneurs are those enterprising individuals who employ new approaches to rent-seeking, criminal, and other unproductive or even socially damaging activities. These are the entrepreneurs who seek to obtain a larger slice of the pie for themselves, rather than increasing the size of the pie for everyone. Prototypes include the enterprising individual who finds an unrecognized avenue to enter the bribe-taking bureaucracy or the lawyer who recognizes an opportunity to undertake a novel and potentially lucrative lawsuit. Even more extreme examples are the creators of firms that are part of organized crime or the warlords who create private armies. These individuals may be as innovative as the founder of a factory engaged in manufacturing legitimate products, but they fail to contribute to the economy and may even detract from its output.

Such an orientation of the unproductive entrepreneur is easily understandable, particularly from a historical perspective. For much of human history, there was no guarantee that the individual whose efforts enhanced the magnitude of the pie would reap rewards. Indeed, history is replete with examples of the opposite. In many cultures, the monarch theoretically owned everything, and in some societies, the king chose to transform this theory into reality quite often. Likelihood of expropriation is surely the ideal disincentive to productive effort. It is so much surer to organize a powerful private army, use it to grab away the neighbor's goods and chattels, and then employ that same army to prevent the nominal ruler from exercising his claim to expropriation rights. If a baron stole horses from a neighbor, the increase in the size of his cavalry could be far more certain than if he had tried to discover better methods of breeding, knowledge that even if acquired successfully might strengthen enemies more than it contributed to their discoverer.

To a degree, the limitations of the reward of the inventor and his productive entrepreneur partner continue today, as Professor Nordhaus (2004) has shown so dramatically.

Furthermore, unproductive entrepreneurship contributed to enhanced social status in many societies. The violent activities of the aggressive warriors were often
perceived as heroic, and the rent-seeking achievement of close friendship with the
king was inherently status-enhancing. By contrast, the dirty work of running an
innovative enterprise has seemed mean and unglamorous by comparison through
much of history. Indeed, the notion that contribution to productive capacity and pro-
duction itself can be a meritorious activity is a rather subtle idea that has been over-
looked or even despised in many societies. Even today, prestige is a reward of many
of the occupations whose goal is redistribution rather than creation of wealth.

While many of the preceding chapters address the pervasiveness of innovative,
unproductive entrepreneurship through history, our focus here is on the evidence
of innovative, productive entrepreneurship in the histories offered in this volume.
Innovative, productive entrepreneurship is the unique phenomenon that has driven
and continues to drive much of the economic growth and productivity increases in
the modern world. While economists have long seen this strong association between
productive entrepreneurship and economic growth as self-evident, it must be con-
ceded that this conclusion rests on little more than (somewhat informed) judgment
and impressionistic deduction. There is little conclusive and direct evidence that
demonstrates the influence of innovative, productive entrepreneurial activity upon
growth. Yet, as we will show, there is a good deal of historical evidence that makes
the absence of such a relationship highly implausible. And it is widely believed and
highly plausible that innovative entrepreneurship not only contributes to growth but
also plays a vital role.

An example will bring this out. There were a number of predecessors of James
Watt who built earlier steam engines. Indeed, there was a working steam engine
invented by Heron of Alexandria, likely in the first century AD. This invention, how-
ever, was used only for amusement (Abraham Lincoln [1858] called it “a toy”), and,
evidently, it was never used for any of the myriad productive purposes for which it
was launched at the end of the eighteenth century. This was probably attributable
to the fact that this early engine was of simple design that offered very little power,
and did not provide the reciprocal (up and down) motion that is needed for tasks
such as driving a pump. But, in addition, Heron, unlike Watt, did not have access
to entrepreneurs to commercialize his invention, for the entrepreneurs of his time
saw their avenue to gain as primarily military activity or the sponsorship of military
invention.

James Watt, in contrast, benefited from his relationship with Matthew Boulton,
a senior partner and an inventor himself, who served as Watt’s entrepreneur. While
Watt’s early steam engine was used primarily to pump water out of mines, Boulton
soon discovered that this market was saturated. It was Boulton’s suggestion that
Watt transform the up-and-down motion of the steam pump into rotary motion that
could serve many other purposes, and that he invent a way to do so that did not use
the already-known device used for the purpose: the long-understood crank, whose
use had recently been blocked by a patent. Watt, in turn, responded by reportedly
getting his assistant to invent the sun and planet gear that was used in subsequent
Boulton-Watt engines and was, in fact, the prime power source of the Industrial
Revolution. Boulton, then, was surely not the inventor, but he was alert to the op-
portunities for the invention’s use, and he recognized the adaptation it required. He
ensured that Watt’s engine, unlike Heron’s, did not languish. Rather, he brought it to
market and put it to productive use—a perfect example of the role of the innovative
entrepreneur and his contribution to economic growth.
Productive Entrepreneurship throughout History

There is a general impression that this type of innovative, productive entrepreneurship is relatively new. Many believe that at least until the Renaissance, and perhaps until the approach of the Industrial Revolution, entrepreneurs were predominantly unproductive. The histories of the Italian condottiere, the bribe-taking mandarin members of the Chinese judiciary, and the British royal favorites certainly contribute to this misconception if considered only by themselves. The work of the historians in this book also suggests, however, that all of the different types of entrepreneurs in our taxonomy have long been with us. There were, in fact, productive entrepreneurs relatively early in the period of recorded history.

In order to illustrate the appearance and development of productive entrepreneurship, we bring together the accounts of this volume into a single—necessarily brief—account of entrepreneurial activity since the very beginnings of history. As Hudson's and Wunsch's chapters suggest, the beginnings of productive entrepreneurship may be found in Mesopotamia. The confluence of the Mesopotamian rivers and their centuries of deposition of rich soil permitted the society to produce a surplus, perhaps for the first time. Furthermore, the geology of the area provided no stone or metal and little lumber, making distant trade mandatory for the production of weapons and for construction of buildings, including palaces. The society, therefore, needed productive entrepreneurs to organize these activities, and it needed appropriate incentives that would induce individuals to pursue this entrepreneurial activity effectively. The arrangement under which religious institutions derived much of their funding from the activities of these entrepreneurs, for example, offered Mesopotamian entrepreneurship an apparent respectability that made it attractive to would-be entrepreneurs. Mesopotamia, it seems, was the first, brief, early period of productive entrepreneurship.

Early Muslim communities, too, experienced and evidently valued productive entrepreneurship. As Timur Kuran explains, the respectability of productive entrepreneurship in this time derives in part from the fact that Muhammad himself was a merchant. In the early period after his death, entrepreneurs who followed the example of Muhammad's mercantile activities were in good repute.

The Roman and medieval eras, however, may be characterized as destructive entrepreneurship at its most manifest. In this golden age of redistributive and destructive entrepreneurship, it was profitable (and honorable) to accumulate wealth by violent means. The possibility of productive entrepreneurship, it seems, was not even considered. The Roman conquests are prime examples of efforts to acquire the possessions of others by violent means, and the history of medieval China also offers insight into the bribes and corruption that typified that period. As Hudson writes, "One looks in vain [in Roman writings] for the idea that profit-seeking enterprise might drive society forward to achieve higher levels of production and living standards." The approach to acquisition of wealth was fundamentally redistributive, using means, often violent, to garner a larger slice of the pie, rather than doing anything that would make the pie larger. Arguably, the destructive entrepreneurship of this period may even serve as part of the explanation for the fall of Rome and the poverty of the "dark ages."

Ironically, it was the very success of this unproductive entrepreneurship that led to the evolution of the institutions that underlay productive entrepreneurship in the
later Middle Ages. The innovative success of the destructive entrepreneurs entailed cumulative military invention, and the kings of this time needed continually to make purchases to acquire these innovative military technologies and protect themselves from others who would use them. As a result of these costly military innovations, coupled with an increasing reliance on paid armies to enhance the size of military forces, these kings—for whom aggressive warfare was arguably the primary occupational activity—were often, indeed almost always, seriously short of funds. For whenever they did manage to scrape up enough to proceed on their military enterprises with little financial hindrance, the arms race was opened yet another notch. By the inherent character of the game, any amount that seemed sufficient on one day was sure to be woefully inadequate on the next.

The kings, then, found themselves perpetually underfinanced, heavily in debt, and unable to find willing lenders. They were reduced to distasteful expediencies, begging for a bit here, wheedling or extorting a bit there. Indeed, much of medieval history is a story of battles—not the supposedly glorious clashes of arms, but battles between the kings and the subjects from whom the monarchs hoped to draw their funding. As some historians have put it, they were “pauper kings.”

These kings, particularly in the British Isles, were forced to turn to their nobles for financial support. And the nobles, in exchange, extracted royal agreements for the earliest institutions to protect productive entrepreneurship in the future, from the sanctity of property to the rule of law more generally. The “pauper kings” reluctantly acceded to the nobility’s demands for protections against arbitrary exactions and abuse in order to receive their funds and other forms of support. In continental Europe, it was not so much the nobles as the merchants, the master craftsmen, the primitive bankers, and the others who acquired wealth from economic activities in the towns to whom the monarchs turned for financing, and in exchange offered a degree of freedom in the towns.

The Renaissance saw further changes that would encourage entrepreneurial activity. During this time, the kings were able to use their financial resources and their improved weaponry and tactics to curb the violent redistributive entrepreneurial activities of their nobility, thereby forcing the nobility to seek new sources of wealth. From the suppression of private armies to the termination of royal power to grant monopolies to favorites, the foreclosure of opportunities for rent-seeking and other forms of unproductive entrepreneurship were key to fostering productive entrepreneurship.

At the same time, the continuing growth of institutions favorable to productive entrepreneurship—the sanctity of property (though it may sometimes have impeded “creative destruction”), the enforceability of contracts, the system of patents, and the rise of banking—all helped to provide inviting opportunities to entrepreneurs for whom rent-seeking and independent military violence had become far more difficult. It is this set of institutions, in fact, that helped to clear the path to industrial revolution and modern innovative (and productive) entrepreneurship. This period between the Renaissance and the Industrial Revolution, then, can be seen as the birth of widespread productive entrepreneurship.

On this view it was only when the king became sufficiently powerful to suppress the activities of independent military entrepreneurs, and when other actions such as the British Statute of Monopolies of 16245 curbed royal grants to rent-seeking companions, that entrepreneurs in substantial numbers turned to productive activities
and contributed a critical element to the explosion of productivity that underlay the Industrial Revolution and its sequel.

Institutions That Have Promoted Innovative, Productive Entrepreneurship through History

As this brief history illustrates, and as Douglass North has long emphasized, it is the institutions of the society that arguably have served to reallocate entrepreneurial activity to a considerable extent from rent-seeking and military violence to innovation and production. We offer below a more detailed account of the evolution of some of these key institutions—the patent system, antitrust law, and bankruptcy protection laws. These are just a few of the institutions that have played a role in encouraging productive entrepreneurial activity in the past, can be altered by government, and, therefore, are promising paths to reform. The evolution of this rule of law, in fact, was perhaps the most important contribution to the flourishing of productive entrepreneurship and the birth of capitalism.

Patent System

The patent system is evidently an institution that effectively promoted innovative entrepreneurship not only via the reward of a temporary legal monopoly, but also by making it possible to transform access to such intellectual property into a salable commodity. Patents offer the entrepreneur an additional means to acquire wealth for herself and her associate inventor while simultaneously ensuring widespread use of her invention. Yet, it is noteworthy here, according to the evidence provided by historians, that in practice patents seem to have had little effect in encouraging innovation during the earlier period of their existence.

A consideration of the curious history of patents reveals, however, that while the early “letters patent” were intended to foster greater utilization of intellectual property, they originally offered no protection or incentives for the creators or inventors themselves. In fact, letters patent were issued in England to encourage the transfer of intellectual property (IP) to new countries, and, for this reason, they were granted to producers who would steal ideas from their own countries and bring them to England where their patent gave them a monopoly over the production and sale of the item for a specified period. The first notable example of a patent occurred in England, at least as early as 1331, when England gave John Kemp, a Flemish weaver, a patent monopoly to pursue his trade in England (see North and Thomas 1973, 147). The patent, in effect, gave a workman who mastered a trade initially carried out only in another country permission to migrate to England and set up this new trade there. North and Thomas indicate that this practice was hardly rare:

This policy of encouraging foreigners to bring in new innovations from the continent was extended to many other areas [beside weaving], mining, metal working, silk manufacturing, ribbon weaving, etc. Of the fifty-five grants of monopoly privilege made under Elizabeth, twenty-one were issued to aliens or naturalized subjects. (1973, 153–54)

This early use of patents, then, was not designed to offer protection to creators of intellectual property but, quite the contrary, as an incentive for transfer of the
intellectual property and to contribute to the enhancement of productivity in the new country.

The patent only later became an instrument to protect inventors, in the wake of parliamentary anger over royal misuse of letters patent to reward royal favorites, and for other purposes having no connection with good IP management. The Statute of Monopolies brought the modern usage of patents into English law. And the explicit incorporation of patents in the Constitution of the United States is an extraordinary act that may well have substantially facilitated the rapid progress of this country toward its position of economic leadership.\(^\text{13}\)

**Antitrust Law**

Antitrust law and the competition it fosters have also played important roles in encouraging innovation in the past century. These laws helped to ensure the intensity of competition among oligopolistic firms that makes innovation a life-and-death matter for them, inspiring their undeviating attention to the marketing of new products and the adoption of new productive processes. Such competition also led to the creation of R & D divisions within the enterprise, working systematically to provide the innovations that firms require in a continuing stream in order to retain their position in the market.

**Bankruptcy Protection**

Yet another institution that has worked in this direction is bankruptcy law, which offers a degree of protection to entrepreneurs who experience failure in an undertaking. Because innovation, with its lack of clear precedent, is inherently a very risky activity, bankruptcy protection is surely a significant encouragement of innovative efforts. These laws were implemented relatively early in the history of the United States,\(^\text{12}\) and it has been argued that the relatively strong penalties that were—and continue to be—exact for failure in the Old World, such as effective denial in much of Europe of funding to individuals who have once experienced failure, help to explain the failure of the major European economies to catch up with that of the United States, despite their short-lived superiority in rate of growth after World War II. This observation also raises questions about the advisability of recent modification of the American bankruptcy laws that have increased the cost of a failed undertaking.

**Banking System**

The rule of law and its associated institutions described above are most often cited as those that are critical for the availability of an abundance of productive entrepreneurial activity. But the current volume also repeatedly draws our attention to the role of the banking system and, in particular, its creation of instruments such as bills of exchange. The role of this institution seems self-evident, but there is more here than is contained in the usual story.

The problem is the size of the business firm created by the entrepreneur and the size of the market in which he operates. In activities that can provide scale economies, efficiency and growth clearly favor firms that are large and markets that are extended. But these markets require time-consuming transportation of products from
the place of production to the retailer's location. If producer A delivers to distant retailer B, either B must pay for the shipment before having received it, or B must have shipped the products before receiving payment, or both. Evidently, without a bank, this transaction will work only if A and B are well acquainted and have reason to trust one another fully.

Before the intervention of the banks, these limitations largely confined such transactions to family and friends, and generally prevented firms from growing beyond the minuscule. Then, in Italy and the Netherlands, banks made their appearance and served as the instrument that solved the resulting problem. An established bank that had nurtured a reputation for trustworthiness could accept a cash deposit from the merchant who was to receive a shipment, holding it until the merchandise had been obtained. In that way, both parties could be sure of receiving what they had been promised, and extensive transactions among distant individuals who did not even know one another could proceed without the previous handicap. This development was supplemented by the invention and adoption of such practices as double entry bookkeeping and new court-enforced rules admitting such recorded material as legitimate evidence of unpaid debt. With the appearance of such institutions, a firm basis for growth of the firm and the market had been provided, and with it the early prosperity of northern Italy, the Netherlands, and, soon after, the United Kingdom. On the general subject, see Joel Mokyr's chapter on the growth of a culture of cooperation through reputation. Mokyr and Casson and Godley also show that in England there was another institutional development that dealt with the problem of trust in distant transaction: the acceptance of the idea in the eighteenth and nineteenth centuries that trustworthiness was an indispensable characteristic of a "gentleman" and an absolute requirement for his acceptance as such by society.

How Institutions That Induce Productive Entrepreneurship Arise

While our discussion here supports the conclusion that the institutions of a society create the incentives that lead entrepreneurs to allocate their capacities to activities that contribute to production, it leaves an important question unanswered: How do these institutions arise? We will argue next that they can arise, and often have, as a matter of historical accident. It would seem that the nations who were affected by the right accidents grew most rapidly. This may appear to be a council of despair, but it is not. For by studying those accidents, one can hope to replicate them or their analogs through appropriate policy. And, of course, the accidental developments that are about to be described are only part of the story and sometimes only a secondary part, but it is contended here that they nevertheless did have an instructive and significant role to play.

This volume is replete with examples of historical accidents that helped to introduce the institutions responsible for a nation's entrepreneurial success. In this chapter alone, we have alluded to the fact that it was the very financial desperation of the monarchy that gave rise to the property rights that protect entrepreneurs, and that patent law was originally conceived to encourage the transfer of intellectual property rather than protect it. In the discussion that follows, we offer a detailed discussion of the unintentional development of institutions that supported entrepreneurship in medieval England and the Dutch Golden Age.
Medieval England

The evolution of the rule of law in Britain serves as a prime example of the accidental creation of institutions that support entrepreneurship. The Magna Carta and the charters that followed it, in fact, were the direct result of the British kings' concessions to the nobility. Like the other medieval kings, those in the British Isles faced an ongoing arms race in which the ante was constantly raised. They were truly the "pauper kings" we described earlier, facing continually rising costs and increasing financial pressures. This story may begin when King John of England's territories were attacked by Philip Augustus, the Capetian king of France. John found himself, like his brother Richard I and father Henry II before him, embroiled in French combat. Furthermore, he faced military problems in Wales, Scotland, and Ireland. Desperate for funds, he resorted to a variety of expedients such as heavy taxes on noble widows that bought them immunity from enforced remarriage, particularly to men beneath them in social status, and large payments required of heirs on reaching maturity before they were allowed to obtain their bequests. These taxes, combined with the loss of Normandy by the Plantagenets at the Battle of the Bovines (1214), led to widespread discontent among the Magnates (the earls and barons). The Magna Carta was agreed to in 1215 as a compromise between the king and the Magnates, restricting the king's power and giving the Magnates proections against the financial exactions and related abuses they had experienced in the past. And while this charter was not truly the confirmation of liberty and democracy that it is sometimes reputed to be, it was clearly a step in a direction that the country would move much farther in the next century.

These rights were extended further when King John's son Henry III faced a similarly desperate situation. Like his father, Henry III was notoriously short of funds. Facing a simultaneous need to defend what was left of his father's Angevin territories in France and to intervene in quarrels between the papacy and the Holy Roman emperor in Sicily, Henry, as was to happen again so many times, adopted financing measures that re-elicited the anger of the barons. The barons finally rose in what was in effect a revolt. In a Parliament held at Oxford in 1258, they forced the king to agree to a new charter that enhanced the rights provided in Magna Carta, more fully curtailing the means that could be used by the monarch in raising funds. More important, to deprive the king of support among the commons, which included many knights and royal officials, the Oxford charter committed the magnates to extend to the (upper) commons rights similar to those that the nobles had extracted from the king for themselves. Once out of the power of the barons, however, Henry sought to invalidate his oath by appealing to the Louis IX, king of France, who ruled that the agreement, extracted by force, was invalid.

Finally, King Henry's son Edward extended these rights even further. Edward's reign was marked by warfare in Wales, Scotland, and France, and he was predictably beset by the usual cash shortage. In 1296 he accepted a new charter, providing guarantees against arbitrary taxation, a key step toward acceptance of the idea that there should be no taxation without representation, something not fully settled until the "Glorious Revolution" of 1688 and the end of the male Stuart line of kings. In the reigns of each of these kings, their financial pressures forced them to extend the property and other individual rights to the nobility—and eventually to what we may consider the upper middle class—that laid the foundation for future productive entrepreneurial activity.
Dutch Golden Age

A consideration of the remarkable Dutch Golden Age, discussed in more detail by Gelderblom, reveals a similar story of fortuitous accidents that led to model institutions, flourishing innovation, and prosperity. The Netherlands, so insignificant in size, led the world economy for four centuries, from the beginning of the fifteenth century until the last years of the eighteenth century. And the country remained one of the world's most prosperous nations even after its economic leadership came to an end.

The role of inventors and entrepreneurs in the country's prosperity cannot be underestimated. Not only did the Dutch invent new methods of construction for canals and dykes, but they designed ships better adapted to the needs of trade and created trading posts in places as far and exotic as New Amsterdam (New York). They designed new architectural forms that were imitated in parts of England and in New England, and they created new financial institutions, including the establishment of the Central Bank in the Amsterdam Exchange Bank early in the seventeenth century (1635). This novel institution preceded both the Bank of Sweden and the Bank of England by years and preceded Alexander Hamilton's bank and the Federal Reserve System by more than a century.¹⁵

Just as many of the British institutions favorable to entrepreneurship were created accidentally, the Dutch accomplishment can be credited, in part, to at least three apparently catastrophic historical phenomena. First, the massive breakdown of the seas on November 1, 1170, created the 200-square-mile Zuider Zee, terrifyingly, in a single day. The flooding undermined grain cultivation and drove a portion of the agricultural labor force to migrate to the towns. At a time when the urban population of Europe was perhaps 10 percent, that of the Netherlands was closer to 50 percent. This move to the towns led to expanded handicraft and primitive manufacturing activities, bringing with them the need and incentives for enterprising activity. Furthermore, the towns in the Middle Ages served as oases of freedom of thought and conscience, including freedom from serfdom, and this freedom arguably played an important role in Dutch prosperity. Some have also emphasized a relatively early Dutch propensity to undertake cooperative (as contrasted with "individualistic") activities such as dam construction that protected the community and the economy from the unrelenting threat from the sea.

The Spanish capture of Brussels and Antwerp serves as a second example of a seemingly calamitous event that turned out to be an economic blessing for the Netherlands. Following the Spanish capture, the Dutch succeeded in cutting Antwerp off from the Baltic for two centuries, thereby protecting the trading position of Amsterdam and encouraging enterprising foreign trade. In addition to enabling economic growth in the city, the Spanish victory brought an exodus of enterprising Calvinist refugees, fleeing Spanish oppression. These refugees joined others, such as the Jews who had fled from Spain, in bolstering Amsterdam's entrepreneurial activity. This, this expusion of talent to other countries, can, of course, be seen many times in history; from Louis XIV's expulsion of the Huguenots from France, to Hitler's expulsion of the Jews,¹⁶ to the exodus of members of the middle class from Castro's Cuba.

These stories, like the accidental and intentional successes of so many other entrepreneurial nations, illustrate the importance of the society's institutions to the creation of an entrepreneurial climate. While the institutions that support productive
entrepreneurship may have arisen quite by accident in previous periods, these tales offer us insights that can help to create policies that will foster the same institutions in our society today. As Landes emphasizes in the introduction to this volume—and as the later chapters of this book and a look at current events indicate, many opportunities for change remain. Wolcott and Chan explain, for example, that the shortcomings of the banking systems of India and China continue to plague their economies. In both countries, it is at least highly plausible that the widespread failure to go beyond business based on family and close friends is a major handicap to their expansion and to growth of their economies. Those who foresee uninterrupted continuation of the spectacular growth of both these economies have not taken into account these and other institutional handicaps. One need only recall how, only a few decades ago, the common wisdom foresaw that the U.S. economy would shortly be surpassed by Japan and Germany, to recognize how tenons such forecasts can be. The continuing abundance of rent-seeking opportunities throughout the world serves as another prime example of the policy work that remains to be done. The prevalence of corruption is well recognized, and it is striking that the much-publicized recent scandals entailing corporate misbehavior in the United States still leave that country far behind much of Africa, Latin America, and the Far East as havens of bribery and other associated phenomena. We still have noteworthy examples of rent-seeking through misuse of the law, notably through attempts at remunerative sham litigation, as when an inefficient business firm sues a more efficient rival on antitrust grounds. There remains also the enterprising activity of crime syndicates as a glaring example of continuing unproductive entrepreneurship.

In short, the lessons of history remain pertinent and show us directions that are promising avenues for amelioration of the economic conditions of the impoverished countries of the world, as well as the measures that the world's successful economies can adopt to help them retain their rate of economic progress. Such insight into appropriate policy is hardly the only object of this book, but it is surely not something of little value.

Notes

1 Franklin 1743. Professor Mokyr notes, in correspondence with the authors of this chapter, that useful knowledge is a term that was in wide use in Enlightenment Europe, and goes back to Bacon and the Baconians.

2 Some illuminating recent examples are provided by Graham in this volume.

3 For a more detailed discussion of this type of entrepreneurship, see Hudson and Wansb in this volume.

4 See Chan in this volume for a broad discussion of the history of entrepreneurship in China.

5 Here Professor Mokyr comments: "There is no question that both Rome and medieval China were corrupt and heavily rent-seeking, but the picture is not quite that bleak.... Michael Hudson clearly cannot find much in Roman writing that would suggest profit-seeking enterprise, but the fact remains that Roman law and relative peace in the Mediterranean enforced by Roman armies contributed to the flourishing of a very high level of international trade (in grain, wine, olive oil, perfumes, and high-end textiles across the mare nostrum). Somebody clearly saw profit opportunities somewhere. In the end, it's not so much that nobody at all tries to engage in productive entrepreneurship as much as... that predatory behavior of those who control the means of violence eventually kills the goose that laid the golden eggs. But that is not instantaneous, and we see in most eras some successful entrepreneurship."

6 See Murray in this volume for a more broad discussion of entrepreneurship in medieval Europe.

7 Of the eighteen English reigns starting with William the Conqueror and ending before Henry VII, the first Tudor, there was substantial warfare in virtually every one.
8 Professor Mokyr comments: "I am not sure if the causality runs from that statute to entrepreneurs turning increasingly to productive activities or the other way around: more and more opportunities through trade and manufacturing had given these people the power of the purse, and they wanted to consolidate that and place constraints on what the executive could do."

9 Examples of other changes in institutions that facilitated entrepreneurship can be found throughout this volume, from the zaibatsu in Japan described by Yonekura and Shintaru, the establishment of joint-stock companies in England described by Munto, and the establishment of a central bank in the U.S. described by Cain, to Murray's discussion of the creation of the bill of exchange.

10 The term comes from letters patent, or letters issued by the monarch meant to be visible [patent] to all (as distinguished from confidential letters close).

11 See Wengenroth in this volume for a discussion of intellectual property rights in Germany and their impact on innovation, and Cain in this volume for a discussion of patent law in the United States. Gelderblom discusses the patenting system in the Netherlands.

12 See Lane in this volume for a discussion of U.S. anti-trust law and bankruptcy law (enacted in 1898).

13 See, for example, the chapters in this volume by Gelderblom and Mokyr.

14 Again, see Murray in this volume for a more broad discussion of entrepreneurship in the broader Europe.

15 See Cain in this volume for a discussion of Hamilton's policies.

16 See Wengenroth in this volume for a discussion of the expulsion of Jewish state employees from their positions and the loss of the scientific elite, including twenty Nobel laureates.

References

