

THE PRIMACY OF ENTREPRENEURIAL DISCOVERY

INTRODUCTION

An economically successful society is one whose members pursue the "right" set of coordinated actions. The "ideal" economic organization for a society consists, therefore, of the pattern of institutions and incentives that will promote the pursuit of the "correct" set of actions by its members. Economic theory has, in general terms, been able to enunciate the conditions to be fulfilled if a set of actions is to be "correct." These optimality conditions are, not surprisingly, governed basically by the available resources and technological possibilities, on the one hand, and, on the other, by the pattern of consumers' tastes. The "economic problem" faced by society is then often viewed as being somehow to ensure that the various economic agents in society indeed undertake those actions that will, all together, satisfy the conditions for optimality. While this formulation is in some respects not quite satisfactory, it will serve reasonably well in introducing my discussion of the role of entrepreneurial discovery.

PATTERNS OF ECONOMIC ORGANIZATION

In theory there exist a variety of possible patterns of economic organization for society, ranging from completely centralized decision making at one extreme, through an array of "mixed" systems, to pure laissez-faire. Several related observations may be made.

First, *all* these possible systems of economic organization involve making *decisions*—with greater or lesser degree of decentralization.

Second, these decisions will necessarily involve an *entrepreneurial element*—regardless of the degree of decentralization sought.

Third, one dimension along which the effectiveness of each of the alternative patterns of societal economic organization will need to be

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assessed will therefore be that of measuring the success with which *entrepreneurial activity can be evoked in that pattern of organization.*

These observations call for some elaboration.

The Entrepreneurial Element in Decisions

I have asserted that decisions necessarily involve an entrepreneurial element. What do I mean by the "entrepreneurial element" in decision?

The nonentrepreneurial element in decisions is easy to pin down. In most textbooks of microeconomics, this nonentrepreneurial element is often made to appear the *only* element in decision making. The nonentrepreneurial element in decision making consists of the task of calculation. A decision maker is, in this context, seen as seeking to achieve an array of goals (or to "maximize" some goal or utility function) with the scarce resources available. In seeking to arrive at the optimal decision, the decision maker must therefore calculate the solution to what, in the jargon of economics, is called a "constrained maximization problem."¹ Correct decision making, in this nonentrepreneurial sense, means correct calculation; faulty decision making is equivalent to mistakes in arithmetic.

This nonentrepreneurial aspect does not have to assume initial omniscience; it is entirely possible for the incompletely informed decision maker to calculate (i.e., to decide) how much knowledge to acquire.² But this nonentrepreneurial aspect does presume, at least, that the decision maker has a clear perception of the scope of his ignorance and of how this ignorance can be reduced; in a sense he knows precisely what it is that he does not know. And it is here that we can recognize the scope for the other element in decision making, the entrepreneurial element.

For the truth is that the calculative aspect is far from being the most obvious and most important element in decisions. When a wrong decision has been made, the error is unlikely to have been a mistake in calculation. It is far more likely to have resulted from an erroneous assessment of the situation—in being overoptimistic about the availability of means or about the outcomes to be expected of given actions; in pessimistically underestimating the means at one's disposal or the results to be expected from specific courses of action. Making the "right" decision, therefore, calls for far more than the correct mathematical calculation; it calls for a shrewd and wise assessment of the realities (both present and future) within the context of which the decision must be taken. It is with this

aspect of decision that we will be dealing in analyzing the entrepreneurial element in subsequent discussion.

No matter how centralized or decentralized a decision-making system may be, its decision makers will regret their decisions if the entrepreneurial element embodied in these decisions is of poor quality. Whatever the institutional context, a correct decision calls for reading the situation correctly; it calls for recognizing the true possibilities and for refusing to be deluded into seeing possibilities where none exist; it requires that true possibilities should not be overlooked, but that true limitations not be overlooked either. It is therefore my contention that alternative systems of economic organization have to be appraised, in part, with an eye to the respective success with which they can evoke entrepreneurship of high quality.

Entrepreneurship in Received Economic Theory

It is by now fairly well recognized that standard economic theory has developed along lines that virtually exclude the entrepreneurial role. This has largely been a result of the tendencies, long dominant in neoclassical economics, to exclude all elements of unexpected change, to focus attention almost exclusively on equilibrium states of affairs, and to treat individual decisions as immune from the hazards of error.³

As Frank Knight of Chicago explained many years ago, in a world from which the troublesome demon of unexpected change has been exorcized, it is not difficult to imagine away any need for entrepreneurship.⁴ In such a world we can reasonably expect decision makers, given sufficient time, to have come somehow to perceive the world correctly. To decide, in such a world, involves nothing more than to perform those calculations we have described as constituting the nonentrepreneurial element in decision making.

In a world of unchanging certainty, where the future unfolding of events is anticipated with assurance and accuracy, selecting the optimal course of action is not a task that challenges the entrepreneurial qualities of vision, daring, and determination. Indeed, it is difficult to imagine how such a world could ever fail to be in anything but a state of optimality. To be sure, such a world must be envisaged as bounded by resource scarcities. But it is difficult to imagine how anyone in such a world—given these resource limitations, and given the accepted structure of ownership—can ascribe any perceived shortcomings to faulty decision making. Such an imaginary world is not paradise, but it can hardly fail to

be the closest to paradise imaginable within the given limitations of supply and the given institutional framework.

When this theoretical framework is uncritically adopted, it becomes easy to fall into the error of tackling economic problems with nonentrepreneurial analytical tools. It becomes natural to assume that the correct decisions are being made, from the viewpoint of the relevant decision makers; that the problems encountered are to be attributed to inadequate resources or to a faulty institutional structure. What is overlooked, in such treatments, is the possibility that a great deal of want and misery are the result of nothing less mundane than *sheer error* on the part of decision makers, that is, of decisions made that, from the decision maker's own point of view, are suboptimal. That such errors may and do occur requires us to recognize scope for entrepreneurial error, for decisions made with faulty assessments of the facts of the world, future as well as present, upon which the decision is to impinge.

Certainly, in a perspective which simply assumes that decision makers, in all circumstances, regardless of institutional environment, inevitably and unerringly find their way to the correct decisions there is little point in inquiring into the circumstances that are most conducive to alert, entrepreneurially successful decision making. It is a fundamental insight—upon which, I believe, the proceedings of today's colloquium are being conducted—that simply to assume correct decision making is to beg far too large a fraction of the essential question confronting us. We begin, in other words, with a healthy awareness that the world is very far from being the best of all possible worlds—even from being the best of those worlds possible with available resources and within existing institutional environments.

It is from this beginning that we are led to appreciate the primordial importance of our question: What institutional circumstances or arrangements, which system of economic and political institutions, can be expected most successfully to evoke those qualities of entrepreneurial alertness upon which the quest for optimality in decision making necessarily depends?

Entrepreneurship as a Scarce Resource

It might perhaps be argued that, important as the quality of entrepreneurship undoubtedly is, it does not involve any really new considerations beyond those usually taken into account in studying the conditions for optimality. All that has been established in the preceding pages, it

may be held, is merely that we must bear in mind the need for a special resource, entrepreneurship, which has often been incorrectly taken for granted. Instead of viewing entrepreneurship as exercised flawlessly, tirelessly, and universally, we must begin to recognize that it is a scarce, valuable resource of which our economic models had better begin to take careful account. But all this, it may perhaps be maintained, does not justify our demand that we transcend the standard maximizing model of decision making. All that has to be done, it may be contended, is to incorporate into our list of required resources the flow of required entrepreneurial services and to ensure that available stocks of such service flows be used optimally. Social optimality, it may be contended, will now be judged within a broader framework in which there is recognition of both the demand for, and availability of, the service of entrepreneurial vision.

More particularly, in respect of the question I have described as primordial, it may be objected that it is fundamentally inappropriate to inquire into the comparative effectiveness of alternative institutional frameworks, for the evocation of entrepreneurship. It will be objected that, since entrepreneurship is a resource no different, for pure theory, from other resources, any comparison among alternative social economic systems must begin with the assumption of some *given*, initial stock of that resource. It will not do to begin a comparison between different economic systems by suggesting that the very pattern of institutional arrangement may have important implications for the initial size of a particular stock of resource. Different economic systems may certainly differ in the efficiency with which they deploy and allocate given resource supplies; but, it may be argued, if we postulate some given supply of a particular resource in one economic system, there can be no objection in principle to supposing any other system to begin with exactly the same supply of that resource.

My response to this line of argument (and thus my defense of the validity of the central question to be addressed here) rests on the insight that entrepreneurship cannot usefully be treated simply as a resource, similar in principle to the other resources available to an economic system.

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What is important is to insist that entrepreneurial alertness differs in fundamental respects from the resources ordinarily discussed in decision making. These differences will justify my contention that there may be

important differences between different economic systems in respect to their success in harnessing entrepreneurial alertness for making error-free decisions.

A cardinal quality of a potential resource, in the economists' analysis of decisions, is that the decision maker can deploy it, if he so chooses, in specific processes geared toward the achievement of specified goals. What the decision maker has to decide is whether to deploy a particular resource, and how and in what quantity to deploy it. He must decide whether to use it at all, and whether to use it for one purpose or for another. The quality of entrepreneurial alertness cannot be discussed in these terms.

Entrepreneurial Alertness Is Not a Conventional Economic Resource. If an entrepreneur's discovery of a lucrative arbitrage opportunity galvanizes him into immediate action to capture the perceived gain, it will not do to describe the situation as one in which the entrepreneur has "decided" to use his alertness to capture this gain. He has not "deployed" his hunch for a specific purpose; rather, *his hunch has propelled him to make his entrepreneurial purchase and sale.* The entrepreneur never sees his hunches as potential inputs about which he must decide whether they are to be used. To decide *not* to use a hunch means—if it means anything at all—that a businessman realizes that he has no hunch (or that his hunch is that it will be best to be inactive for the time being). If one has become sufficiently alerted to the existence of an opportunity—that is, one has become sufficiently convinced regarding the facts of a situation—it becomes virtually impossible to imagine *not* taking advantage of the opportunity so discovered.

Entrepreneurship is thus not something to be deliberately introduced into a potential production process: it is, instead, something primordial to the very idea of a potential production process awaiting possible implementation. Entrepreneurial alertness is not an ingredient *to be deployed* in decision making; it is rather something in which *the decision itself* is embedded and without which it would be unthinkable.

It is true that *knowledge* (e.g., in the sense of technical expertise) may be deployed. A person may certainly decide that it does not pay to use his knowledge in a specific manner. Or he may decide that it does pay to use it. Here knowledge is a resource at the disposal of the entrepreneur. He is conscious of his knowledge as something to be used or not. But

this refers only to knowledge of how to achieve specific goals, not knowledge of whether it is worthwhile to attempt to achieve a goal at all. A distinguishing feature of entrepreneurial insight consists precisely in the absence of awareness by its possessor that he does possess it. A would-be entrepreneur may agonize over whether to embark on a particular venture. His trauma arises not from deciding whether to use his entrepreneurial vision; it stems from his unsureness of what he "sees."

Entrepreneurial Opportunity May Be Blocked by Lack of a Resource but Not of Insight. Again, it is integral to a necessary resource (in the usual sense) that a decision maker may feel its lack. A decision maker may say, "I have all the ingredients necessary to produce ice cream, except sugar." The opportunity to achieve a particular goal is blocked only by lack of some necessary resource. But it is absurd to imagine a decision maker saying (on a commercial venture about the profitability of which he is profoundly skeptical) that he sees a profitable opportunity the exploitation of which is blocked only by lack of entrepreneurial insight. It would be absurd because this entrepreneur is (correctly or otherwise) convinced that he does *not* see any profitable opportunity in this venture at all.

To repeat what was stated earlier, all this does not apply to *technical* knowledge which an entrepreneur may know exists and which he knows he lacks. It is certainly possible for a decision maker to say, "I have all the ingredients for ice cream, but I lack the relevant recipe." He may know that a recipe exists, and that it is a good one, without knowing what it is. But for a man to refrain from a particular productive venture because he is not convinced that it is sound—even if it turns out that he was wrong—is not to refrain from it because he has been unable to lay hands on the appropriate vision; it is to refrain because he is convinced (rightly or wrongly) that, with respect to this venture, the *best entrepreneurial alertness finds nothing to be seen.*

Entrepreneurial Alertness Is Not a Potential Stock Available to Society. It is because of this inherent *primacy* of entrepreneurial alertness and vision (as contrasted with deployable resources)⁵ that we cannot avoid the question to be addressed in this paper—the varying degrees of success with which alternative economic systems can inspire entrepreneurial alertness. We do not view the *potential* stock of entrepreneurial alertness in a society as some quantity "available to be used by society." (Were this

the case one could proceed to inquire how different systems variously succeed in most effectively using this uniformly given stock.) Instead we recognize the quality of entrepreneurial alertness as something which somehow emerges into view at the precise moment when decisions have to be made. As we shall see, this opens up the important possibility that the institutional framework within which decisions are made may itself vitally affect the alertness out of which those decisions emerge.

THE COST OF ENTREPRENEURSHIP

This line of argument points to a further related insight: *entrepreneurship is costless*. In using any quantity of a scarce resource (in the usual sense of that term) the decision maker is always viewed as choosing between alternative goals to which the scarce resource might be applied. The goal forgone is the cost of using the resource for its present purpose. In the case of entrepreneurial alertness, however, a decision maker never considers whether to apply some given potential alertness to the discovery of opportunity A or opportunity B. As already argued, the opportunities (or any one of them) are either perceived or not perceived; alertness is not something about which a decision can be made *not* to deploy it. (In this we distinguish sharply between pure alertness, on the one hand, and "deployable" scarce inputs that may be useful in decision making, for example, time, technical knowledge, managerial expertise, on the other.) To recognize that opportunity A exists need not preclude simultaneously recognizing that opportunity B exists.

Conversely, to fail to recognize that opportunity A exists cannot be explained in terms of the high cost of so recognizing it; if opportunity A has not been recognized, the failure represents some shortcoming in entrepreneurial alertness, not the outcome of a decision to deploy it for the discovery of other opportunities.

Faulty Entrepreneurship Means Alertness Remains Untapped. That in the real world we encounter innumerable instances of faulty and inadequate entrepreneurship must be interpreted, therefore, not as evidence of the absolute scarcity of entrepreneurial alertness (with the existing stock of it having been applied elsewhere), but as evidence that the alertness costlessly available has somehow remained latent and untapped. The central question then looms even more significantly than ever. What institutional frameworks are best suited to tap the reservoir of

entrepreneurial alertness which is certainly present—in potentially inexhaustible supply—among the members of society?

THE QUALITIES OF ENTREPRENEURSHIP— THE UNCHARTED FRONTIER

Although, as Ludwig von Mises pointed out long ago,⁶ all individual action is entrepreneurial, and although I have described entrepreneurial alertness as in principle inexhaustible, I have also been careful to notice that potential alertness may be (and so often is) untapped and inert. We know, certainly, that individuals display vastly different degrees of entrepreneurial alertness. Some are quick to spot as yet unnoticed opportunities, others notice only the opportunities revealed by the discoveries of others. In some societies, in some climates, among some groups, it appears that entrepreneurial alertness is keener than in others. Studies of economic development have come to recognize that the qualities called for in successful entrepreneurship are not uniformly distributed and certainly do not appear to be in infinite supply.

It would certainly be desirable to be able to identify with precision those human qualities, personal and psychological, which are to be credited with successful entrepreneurial alertness, drive, and initiative. It would be most valuable to be able to study the short-run and long-run impact upon the development of these "entrepreneurial" qualities of alternative social, economic, and institutional frameworks. It would be important to know, for example, if a comfortable sense of security discourages noticing new opportunities. If "independence" or "economic freedom" encourages entrepreneurial drive and initiative, this would be significant information. Likewise, does "competition" encourage alertness to new opportunities?

Research on Psychological Aspects Is Desirable. Up to the present, little systematic work appears to have been done on these questions. Observations made are likely to be based on "common sense" or on anecdotal foundations. It is certainly necessary to go beyond this elementary stage. Indeed, an important frontier of knowledge, largely unexplored, appears to consist of those aspects of psychology, such as temperament, thirst for adventure, ambition, and imagination, that are likely to throw light on the development of the qualities of entrepreneurship and on the ways alternative institutional arrangements may affect such development. It is

to be expected and very much to be desired that research should proceed on this frontier during the years ahead.

Applied entrepreneurial theorists should look to this research with considerable interest; it is to be hoped that their own needs and interests will help to define the directions along which this research proceeds and to formulate the questions it seeks to answer.

My tentative observations here will suggest that a number of important general statements can be made even before we enjoy the systematic knowledge I anticipate will emerge from research into the psychology of entrepreneurship.

THE INCENTIVE FOR ENTREPRENEURIAL DISCOVERY

Were entrepreneurship a scarce resource in the usual sense, economists would have no difficulty in spelling out, at least in general terms, the kinds of incentives capable of coaxing out the desired quantity of entrepreneurial discovery. Potential entrepreneurs would have to be offered rewards that more than offset the costs of exercising entrepreneurship. This, after all, is how economists understand the role of incentives; this is how the price system is perceived to offer, via the resource market, the incentives required to stimulate resource supply and to allocate it among alternative uses. But the special aspects of entrepreneurship render this kind of incentive system inappropriate to entrepreneurial alertness and discovery.

Since entrepreneurship is costless (no incentive at all is needed, in principle, to activate entrepreneurial vision), and since on the other hand entrepreneurial vision is not uniformly and continuously "switched on" to take advantage of all opportunities, we are very much concerned to identify what it is that *does* "switch on" entrepreneurial vision and discovery.

With scarce resources in the usual sense, it is meaningful to talk of the kind of incentive that needs to be "offered" to owners to stimulate supply. We can imagine, that is, that some entrepreneur already has a fairly clear picture of the results to be obtained from deploying the relevant resource in some particular line of production. We can then talk of whether it is worthwhile for him to offer the resource price required to overcome the cost of supplying the resource. The point is that the notion of a needed incentive, in this usual sense, presupposes the clear perception, even before the deployment of the service, of its usefulness in production.

As has already been emphasized, such a perception is ruled out by definition in the case of entrepreneurial alertness. No one "hires" or "offers incentives" to the entrepreneur. To hire an "entrepreneur" is to be an *entrepreneur*—simply shifting the problem back to the incentives that might galvanize this latter entrepreneur into action. It cannot be sufficiently emphasized that (a) until an opportunity *has* been discovered, no one knows how much to offer as an incentive for its discovery; and (b) once the opportunity has been discovered, it is no longer relevant to inquire into the springs of entrepreneurship—since it will already have been exercised.

The Promise of Pure Gain Is Entrepreneurial Incentive. There seems one statement, however, that can be made about the incentives required to excite entrepreneurial alertness. It is a statement which sees such incentives as having little in common with the character of and role for incentives in the usual sense. It can be stated with considerable confidence that *human beings tend to notice that which it is in their interest to notice.* Human beings notice "opportunities" rather than "situations." They notice, that is, concatenations of events, realized or prospective, which offer *pure gain*. It is not the abstract *concatenation* of these events which evokes notice; it is the circumstance that these events offer the promise of *pure gain*—broadly understood to include fame, power, prestige, even the opportunity to serve a cause or to help other individuals.

Two individuals walk through the same city block teeming with hundreds of people in a variety of garbs, with shops of different kinds, advertising signs for many goods, buildings of different architectural styles. Each of these individuals will notice a different set of items out of these countless impressions impinging on his senses. What is noticed by the one is not what is noticed by the other. The difference will not merely be one of chance. It is a difference that can be ascribed, in part, to the *interests* of the two individuals. Each tends to notice what is of interest to him.

A difference between the price of apples traded in one part of the market and the price of apples traded in another part may pass unnoticed. It is less likely to pass unnoticed if it constitutes a phenomenon of interest to its potential discoverer. A concatenation of possible events (in this case the possible purchase of apples at a lower price, to be followed by their sale at a higher price) may not be noticed at all unless the potential discoverer stands to gain from the price differential. *In order to "switch on"*

the alertness of a potential discoverer to socially significant opportunities, they must offer gain to the potential discoverer himself.

This kind of incentive—the incentive that somehow converts a socially desirable opportunity into a personally gainful one—is not needed to ensure pursuit of that opportunity *after* its discovery. Once the socially desirable opportunity has been perceived, individuals may be persuaded (or threatened) to act on that opportunity simply by suitable choice of reward (or punishment). The kind of incentive here under discussion is that required to reveal opportunities that have *until now been perceived by no one at all.*

PERFORMANCE OF ALTERNATIVE ECONOMIC SYSTEMS UNDER ENTREPRENEURIAL INCENTIVE

How do alternative socioeconomic systems appear likely to perform in terms of this kind of incentive? We will consider a free market economy, a centralized (socialist) economic system, and a regulated market economy. Our concern is solely with the comparative scope they hold for entrepreneurial incentives.

Entrepreneurship in the Free Market

The free market is characterized most distinctively, for our purpose, by *freedom of entrepreneurial entry*. Given some accepted system of property rights, individual participants are free to enter into mutually beneficial trades with each other. Production decisions involve judgments about buying inputs on factor markets in order to sell output in product markets. Market prices therefore guide the decisions which determine the allocation of society's resources among alternative lines of output. Were the market to have attained full equilibrium, it may, under specific assumptions, be described as having attained an optimal allocation of resources.⁷ But (especially in view of ambiguities surrounding the interpretation of "social optimum" and of the possibility that not all the specific assumptions will be fulfilled in practice) this is *not* the interesting proposition—even were it reasonable to view the free market economy as in continuous equilibrium.

What is important about the market economy is that unexploited opportunities for reallocating resources from one (low market valued) use to another of higher value offer the opportunity for pure entrepreneurial gain. A misallocation of resources occurs because, so far, market

participants have not noticed the price discrepancy involved. This price discrepancy presents itself as an opportunity to be exploited by its discoverer. *The most impressive aspect of the market system is the tendency for such opportunities to be discovered.*

The Discovery Process of the Market. It is in a sense similar to this that Hayek has referred to the competitive market process as a "discovery procedure."⁸ The essence is not that market prices offer spontaneously developed "signals" able faultlessly to coordinate millions of independently made decisions. (This would occur only in equilibrium; in disequilibrium the prices which prevail would *not* so perfectly coordinate decisions.) It is rather that the disequilibrium situation—in which prices do not offer the correct signals—is one which offers entrepreneurs the incentives required for the discrepancies to be noticed and corrected. In the course of this entrepreneurial process, new products may be introduced, new qualities of existing products may be developed, new methods of production may be ventured, new forms of industrial organization, financing, marketing, or tackling risk may be developed. All the ceaseless churning and agitation of the market is to be understood as the consequence of the never-ending discovery process of which the market consists.

Entrepreneurship in the Socialized Economy

Little work has been done on the analysis of entrepreneurship in fully socialized societies. The great debate on economic calculation under socialism carried on between the two world wars in many respects revolved around precisely this issue but was couched in terms which unfortunately permitted its central importance to be overlooked. The attempts by Oskar Lange (of Poland) and others to show how a socialist system could be set up that would permit decentralized decisions by managers of socialist enterprises on the basis of centrally promulgated "prices," along the same lines as the price system under the free market, unfortunately completely overlooked the entrepreneurial character of the price system.

Lange relied on the "parametric function" of prices, that is, on that aspect of prices which permits each decision maker to treat them as equilibrium prices to which he must passively adjust himself.⁹ But in this view of the market (and hence of the possibility of a socialist "price" system), Lange failed to recognize that the distinctive aspect of the market is

the manner in which prices *change*, that is, that market prices are in fact treated nonparametrically. It is one thing to imagine that socialist managers can be motivated to obey rules on the basis of centrally promulgated "prices"; it is quite another to take it for granted that the nonparametric function of price (in which, that is, price is *not* being treated as a datum but is subject to change by individual market participants), a function which depends entirely on entrepreneurial discovery of *new* opportunities for pure profit, can be simulated in a system from which the private entrepreneurial function is completely absent.

Alertness by "Price" Planners and Plant Managers. Under a Lange-type system, alertness would be called for at a number of levels. Officials deciding on the "price" structure must do so by what they know about the performance of the economy under earlier "price" structures and by what they anticipate to be the pattern of consumer demand and of resource supply in the period ahead. In promulgating a list of "prices" it is necessary to determine, first of all, the list of commodities and of resource services for which "prices" are to be set. The construction of this list requires an enormous volume of entrepreneurial alertness on the part of these officials. After all, some products should not be produced at all; others very definitely ought to be produced, but officials may be quite ignorant of them or of their urgency. This is of course more particularly likely to be true of new and innovative products and product qualities. But it could occur with any product whatever.

Again, the Lange system would call for alertness by socialist plant managers. They would have to identify sources of resource supply; they would have to notice technological possibilities that may not hitherto have been known, or that, given the old price structure, may not have been economic. They would have to notice the need for and possibility of any number of changes (innovative or otherwise) which changed patterns of tastes, for example, might make worthwhile. There is certainly nothing in Lange's own description of his system to suggest how this might be ensured.

Will Available Options Be Noticed? How? The question the entrepreneurial theorist must ask is not whether, given available known options, the relevant socialist official is operating under an incentive system that will make it personally gainful for him to select the optimal course of action

for society. Our question is rather whether there is any assurance that relevant options will in practice be noticed as being available. What might motivate an official to notice an opportunity not yet adopted (but which it might be highly valuable to pursue)? It will not do to suggest that some higher official arrange matters so that when the (lower) official does notice the opportunity he can personally benefit by its adoption. This merely passes our question up the line: What might motivate this higher official to notice the opportunity?—and even to notice its worthwhileness *after* it has been brought to his attention?

We will, for the present, ignore the question of how a newly discovered valuable social opportunity is revealed, even after the event, as having been such. Our question will confine itself to asking how it might be ensured that such social opportunities constitute at the same time privately gainful opportunities for their potential discoverers. It is doubtful in the extreme if ideals such as benevolence or patriotism can be relied upon, in general, to enable a potential discoverer to identify his own personal interest with that of the discovery of an opportunity for a reallocation of resources desirable for society.

We might imagine, of course, a system in which there is not merely decentralization of decision making, in the Lange sense, but also freedom for socialist managers to buy and sell on behalf of the state (when discrepancies among socialist "prices" might have been discovered) and to retain for themselves some fraction of the price differential. If such trading is restricted to those who are already socialist managers, we will have to examine the mechanism of selection of managers to see whether it indeed ensures that those with entrepreneurial skills tend to become socialist managers (since the socialist state would not be permitting others to "prove" their entrepreneurial skills in this way). On the other hand, if entrepreneurial trading is to be open for all (raising, let me of course note, the obvious question of access to society's capital to be risked in such ventures), then clearly we have moved closer and closer toward a "mixed" capitalist system in which private entrepreneurs might be free to seek profits within a system of state-controlled prices (a regulated system which will be briefly considered below).

Individual Decision Makers Cannot Profit under "Market" Socialist Schemes. We may talk of various schemes for "market" socialism along Lange's lines, in which some decisions are left to lower-ranking officials to be made

on the basis of centrally designed systems of "prices." No matter how extensive the degree of decentralization thus achieved, however, a critical condition for the socialist quality of the system appears to be that neither at the level of the central design of "prices," nor of individual managers' decisions made on the basis of these "prices" may decisions be made primarily in order that the decision maker can profit personally from errors discovered. Those responsible for designing the system of socialist "prices" are clearly not participants in any entrepreneurial market; their function is to impose "prices" upon the socialist "market."

To imagine that in this socialist "market" freedom of entry for private profit-making entrepreneurial activity is to be permitted is surely to compromise fatally the definition of a socialist economic system. But without such freedom of entrepreneurial entry, market socialism has a fatal flaw: it has not succeeded in identifying any way by which errors, whether of omission or commission, can be systematically avoided by decision makers. It has not identified any way the discovery and avoidance of error redounds directly to the personal benefit of the discoverer. It has not identified how the unsuspectedly inefficient socialist venture might so reveal itself to a socialist decision maker in advance as a threat to his own well-being; it has not identified how the currently undreamed of venture, of critical benefit to society, might reveal itself to a socialist planner as one offering him personal gain.

Incentives to Socialist Managers Deny the Essential Role of Entrepreneurial Discovery. I do not deny the possibility of arranging incentives to socialist managers to produce more, or to produce with a smaller labor force or lower energy consumption. Nor do I even deny the possibility of offering incentives that will reward innovation. Incentives can certainly be structured to reward inventors and innovators of new products and new production techniques. Recent extensive study of innovation in the Soviet Union has, for example, confirmed the significant vitality of the innovative process there (although the process lags more or less behind that in capitalist economies).¹⁰ But to reward managers for meeting or exceeding target output quantities presupposes that it is *already known* that more of these outputs is urgently required by society; to reward managers for introducing a new product is to presume that it is *already known* that this particular new product—or else *any* new product—is

socially more important (taking into account the resources required for its production) than the product it replaces; to reward managers for introducing innovative methods of production is to presume that it is *already known* that the additional inputs called for by the new technique are less costly to society than those the technique avoids—or else that *any* change in production technique must be an improvement over those currently employed.

That these matters may already be known is in many instances entirely plausible. But if they *are* assumed already known, we are simply assuming away the need for entrepreneurial discovery. The task is to ensure the discovery—by someone, somewhere, who possesses power to set things into motion—of which products (existing or new) should be produced (and in what quantities), the urgency of which the current conventional wisdom has *failed* to recognize. The problem is to identify techniques of production whose usefulness has up until now *not* been perceived. Not all innovation is socially desirable; not all expansion of lines of output is socially desirable. What is required is an incentive system to convince decision makers that when they discover opportunities others will deny to exist, they (the discoverers) will be the gainers.

Thus, far, in all the discussion of varieties of socialism, of incentive systems and planning theories, I have not seen *this* problem addressed. Nor is it at all apparent how, without fundamentally compromising the essential defining criteria for socialism, it can be solved.

*Entrepreneurship in the Regulated Market Economy*¹¹

Most societies in the modern world have allowed their economic systems to follow neither the pattern of pure socialism nor that of pure capitalism. They consist of market economies that have been circumscribed by more or less extensive systems of state intervention. Convinced that the unhampered market will generate undesirable price structures or undesirable arrays of output qualities, working conditions, or other undesirables, the state intervened, replacing the laissez-faire market by the regulated market. Price ceilings and price and wage floors, transfer of income, imposed safety standards, child labor laws, zoning laws, prohibited industrial integration, prohibited competition, imposed health warnings, compulsory old-age pensions, and prohibited drugs are among the countless controls that possibly well-meaning public officials impose. What is the role of entrepreneurial discovery in the regulated market?

Genuine—but Inhibited—Entrepreneurial Incentive. Despite the controls, regulations, and interventions, there exist in such systems genuine markets for both resource services and consumer products. Although the prices which emerge in regulated markets may have been more or less drastically distorted in the regulatory process, they are (except for directly controlled prices) nonetheless market prices. To the extent that entrepreneurial entry remains free, discrepancies in these prices provide the incentives for entrepreneurs to capture pure profit, leading to a process of entrepreneurial competition acting at all times to modify the existing price structure.

Nevertheless, it is not difficult to perceive the many ways entrepreneurial discovery may come to be inhibited or redirected under regulatory constraints. And regulation raises new and important questions concerning the way the agents of the state (whether legislators or officials in other stages of regulation and its enforcement) come to notice where opportunities for supposedly beneficial regulation may exist. Let us take up these latter questions first.

Knowledge and Discovery Are Absent in Price Setting and Resource Allocation. Government regulation takes the general form of imposed price floors, price ceilings, mandated quality specifications, and similar measures. We will assume that the hope surrounding such government impositions is that they will confine market activities to desired channels and at desired levels. But it is by no means clear how officials will know what prices to set, or if their earlier decisions have been in error. It is not clear how officials will *discover* those opportunities for improving the allocation of resources (which, after all, we can hardly assume to be automatically known at the outset of a regulatory endeavor). The regulator's estimates of the prices consumers are prepared to pay, or of the prices resource owners are prepared to accept, are not *profit-motivated* estimates. But estimates of market demand conditions, or of market supply conditions, that are not profit motivated cannot reflect the powerful, discovery-inspiring incentives of the entrepreneurial quest for profit.

It is, further, not clear how it can be ensured that government officials who perceive market conditions more accurately than others will tend systematically to replace less competent regulators. It is not clear what proxy for entrepreneurial profit and loss there might be that could inspire officials to see personal gain for themselves in successful discovery. What

regulators know (or believe they know) at a given moment is presumably only partly correct. No systematic process seems available through which regulators might come to discover what they have not known, especially since they have not known that they enjoy less than complete awareness of relevant situations. *If they do not know what they do not know, how will they know what remains to be discovered?*

Quite apart from the question of the entrepreneurship required to engage in regulation believed to be desirable, we must, in the context of the regulated market economy, also consider the impact of regulation upon the pattern and direction of entrepreneurial discovery in the marketplace. There is a serious likelihood that regulatory constraints may bar the discovery of pure profit opportunities (and thus of possibilities for socially beneficial resource reallocation).

Damaging Effects of Regulatory Controls and Price Ceilings. A good deal of regulation consists in creating *barriers to entry*. Tariffs, licensing requirements, labor legislation, airline regulation, and bank regulation, for example, do not merely limit numbers in particular markets. These kinds of regulatory activity tend to bar entry to entrepreneurs who believe they have discovered profit opportunities in barred areas of the market. Such barriers may, by removing the personal gain which entrepreneurs might have reaped by their discoveries, bring it about that *some opportunities may simply not be discovered by anyone*. An entrepreneur who knows that he will not be able to enter the banking business may simply not notice opportunities in the banking field that might otherwise have seemed obvious to him; those who are already in banking, and who have failed to see these opportunities, may continue to overlook them. Protection from entrepreneurial competition does not provide any spur to entrepreneurial discovery.

Imposed price ceilings may, similarly, not merely generate discoordination in the markets for existing goods and services (as is of course well recognized in the theory of price controls); they may inhibit the discovery of wholly new opportunities. A price ceiling does not merely block the upper reaches of a given supply curve—further increases in supply to meet demand. It may also inhibit the discovery of as yet unsuspected sources of supply (which in the absence of the ceiling might have shifted the entire supply curve to the right—made supplies marketable at lower prices—as these sources came to be discovered) or of wholly unknown new products.

The imposition of price ceilings, which has switched off the lure of pure profits in this way, is not accompanied, as far as can be seen, by any device that might, in some alternative manner, lead a potential discoverer to associate a discovery with his own personal gain.

CONCLUSION

This discussion has focused attention on a neglected aspect of economic decision making, the urgency for incentives for the "entrepreneurial" discovery of what opportunities exist for economic action. Pursuing this point further, I have pointed to the need for critical assessment, within any economic system of organization, of the way the system permits the potential discoverers to identify their own personal interest with the successful discovery of socially desirable opportunities for change. In the briefest possible framework, I have considered aspects of the socialist system and of the regulated market economy, in contrast to the *laissez-faire* market system.

A great deal of work is waiting to be done in the economics of entrepreneurship. It has been my purpose to emphasize the enormous stake society—under whatever economic system it may operate—holds in the successful pursuit of such research.

NOTES

1. That is, the problem of achieving maximum desirable results without overstepping the constraints imposed by the limited resources available. This emphasis on maximization is to be traced to the influence of Lionel H. Robbins, *The Nature and Significance of Economic Science* (London: Macmillan, 1932).
2. The literature on the economics of search proceeds on this basis. The classic article is G. J. Stigler, "The Economics of Information," *Journal of Political Economy* 69 (June 1961): 213-25.
3. An elaboration of this theme is in my *Competition and Entrepreneurship* (Chicago: University of Chicago Press, 1973), chaps. 1-3.
4. F. H. Knight, *Risk, Uncertainty and Profit* (Boston: Houghton Mifflin, 1921).
5. A fuller discussion of this insight is in my *Perception, Opportunity, and Profit* (Chicago: University of Chicago Press, 1979), chaps. 9, 10.
6. In Ludwig von Mises, *Human Action* (New Haven: Yale University Press, 1949), p. 253.
7. A complete discussion of this central theorem of welfare economics is in W. J. Baumol, *Economic Theory and Operations Analysis*, 4th ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1977), chap. 21.

8. F. A. Hayek, "Competition as a Discovery Procedure," in *New Studies in Philosophy, Politics, Economics and the History of Ideas* (Chicago: University of Chicago Press, 1978).

9. Oskar Lange, "On the Economic Theory of Socialism," in Oskar Lange and Fred M. Taylor, *The Economic Theory of Socialism*, ed. Benjamin E. Lippincott (New York: McGraw-Hill, 1964), p. 70. The initial statement by Mises demonstrating the problems in socialist economic calculation was "Die Wirtschaftsrechnung im sozialistischen Gemeinwesen," *Archiv für Sozialwissenschaften und Sozialpolitik* 47 (April 1920): 86-121, reprinted in *Collectivist Economic Planning*, trans. and ed. Friedrich A. Hayek (London: Routledge and Kegan Paul, 1935). Hayek's own response to Lange is contained in his *Individualism and Economic Order* (London: Routledge and Kegan Paul, 1949).

10. Joseph S. Berliner, *The Innovation Decision in Soviet Industry* (Cambridge: MIT Press, 1976).

11. Further discussion of this theme is in my "The Perils of Regulation: A Market-Process Approach," Occasional Paper of the Law and Economics Center, University of Miami, 1978, reprinted in this volume, chap. 6.