CHAPTER II

ENTREPRENEURSHIP

As it is impossible to grasp the concept of socialism without a prior understanding of the essence of entrepreneurship, this chapter will be devoted to a study of the notion, characteristics, and basic elements of entrepreneurship. Our idea of entrepreneurship is at once very broad and very precise. It is closely related to the conception of human action as an integral and fundamentally creative feature of all human beings, and also as the set of coordinating abilities which spontaneously permit the emergence, preservation, and development of civilization. Finally, our analysis of entrepreneurship will allow us to propose an original definition of socialism, understood as a "social illness," the most characteristic symptoms of which are widespread maladjustment and extensive discoordination between the individual behaviors and social processes that make up life in society.

1. THE DEFINITION OF ENTREPRENEURSHIP

In a broad or general sense, entrepreneurship actually coincides with *human action*. In this respect, it could be said that any person who *acts* to modify the present and achieve his objectives in the future exercises entrepreneurship. Although at first glance this definition may appear to be too broad and to disagree with current linguistic uses, let us bear in mind that it coincides with a conception of entrepreneurship which economists are increasingly studying and developing.[1] Moreover, this conception fully agrees with the original *etymological* meaning of

[1] The primary writer on entrepreneurship as we conceive it in this book is Israel M. Kirzner, former Professor of Economics at New York University. Kirzner authored a trilogy (*Competition and Entrepreneurship; Perception, Opportunity, and Profit;* and *Discovery and the Capitalist Process* [Chicago: University of Chicago Press, 1973, 1979, and 1985 respectively]), in the first work of which he does an impeccable job of delving into and elaborating on the different aspects of the conception which his teachers, Ludwig von Mises and Friedrich A. Hayek, initially developed of entrepreneurship. In addition, Kirzner brought out a fourth book (*Discovery, Capitalism, and Distributive Justice* [Oxford: Basil Blackwell, 1989]), which he devotes entirely to a study of the implications which his idea of entrepreneurship has in the area of *social ethics*. Finally, when this chapter had already been written, Kirzner published another notable book, *The Meaning of Market Process: Essays in the Development of*

the term *enterprise* [*empresa* in Spanish]. Indeed, both the Spanish word *empresa* and the French and English expression *entrepreneur*[2] derive etymologically from the Latin verb *in prehendo-endi-ensum*, which means *to discover, to see, to perceive, to realize, to attain*; and the Latin term *in prehensa* clearly implies *action* and means *to take, to catch, to seize*. In short, *empresa* is synonymous with action. In France, the term *entrepreneur* has long been used, and during the High Middle Ages it designated people in charge of performing important and generally war-related deeds,[3] or entrusted with executing the large cathedral-building projects. The *Diccionario* of the *Real Academia Española* [the Royal Academy of the Spanish Language] gives one meaning of *empresa* as "arduous and difficult *action* which is valiantly undertaken."[4] *Empresa* also came into use during the Middle Ages to refer to the insignias certain orders of knighthood bore to indicate their pledge, under oath, to carry out a certain important action.[5] The conception of an enterprise as an action is necessarily and inexorably linked to an *enterprising* attitude, which consists of a continual eagerness to seek out, discover, create, or

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Modern Austrian Economics (London: Routledge, Chapman, and Hall, 1992), which contains his then most recent contributions, as well as a series of previously published papers which we have taken into account here whenever possible. En Spain, apart from my own work, the following writings, among others, contain an economic analysis based on entrepreneurship: José T. Raga, "Proceso Económico y Acción Empresarial," in *Homenaje a Lucas Beltrán* (Madrid: Moneda y Crédito, 1982), 597-619; Pedro Schwartz, *Empresa y Libertad* (Madrid: Unión Editorial, 1981), esp. chap. 3, 107-148; and Juan Marcos de la Fuente, *El empresario y su función social*, 3rd ed. (Madrid: Fundación Cánovas del Castillo, 1983).

[2] Curiously, English has incorporated the French word *entrepreneur* in its literal sense. It did so rather belatedly though, as we can see from the 1821 English translation of Juan Bautista Say's *Tratado de Economía Política*, in which the translator, C. R. Prinsep, was obliged to awkwardly render the French term *entrepreneur* as *adventurer* in English, which shows that the transfer of terminology had not yet occurred. On this topic, see, for example, pages 329 and 330 of the above English edition, republished in 1971 by Augustus M. Kelley (New York). John Stuart Mill, for his part, lamented the lack of an English expression equivalent to the French word *entrepreneur* and stated in 1871 that "it is to be regretted that this word – undertaker – is not familiar to an English ear. French political economists enjoy a great advantage in being able to speak currently of: *les profits de l'entrepreneur*." *Principles of Political Economy*, Augustus M. Kelley reprint (Fairfield, 1976), footnote, 406. Mill refers here, almost word for word, to the title of section 3 of chapter 7 of book 2 of the sixteenth edition of *Traité d'Économie Politique*, by J. B. Say (reprinted in Geneva: Slatkine, 1982), 368.

[3] Bert F. Hoselitz, "The Early History of Entrepreneurial Theory," *Explorations in Entrepreneurial History* 3, no. 4 (15 April 1956): 193-220.

[4] *"Acción ardua y dificultosa que valerosamente se comienza."*

[5] For example, at the beginning of chapter 2 of part 1 of Cervantes's immortal work, we read the following of Don Quixote: "But scarcely did he find himself upon the open plain, when a terrible thought struck him, one all but enough to make him abandon the *enterprise* at the very outset. It occurred to him that he had not been dubbed a knight, and that according to the law of chivalry he neither could nor ought to bear arms against any knight; and that even if he had been, still he ought, as a novice knight, to wear white armour, without a device [*empresa*] upon the shield until by his prowess he had earned one." (Italics added.) Cervantes, *Don Quixote*, trans. John Ormsby (London, 1885)

identify new ends and means (all of which is in accordance with the above-mentioned etymological meaning of *in prehendo*).

Human Action: Ends, Value, Means, and Utility

Now that we have defined entrepreneurship in terms of human action, we need to explain what we mean by this term. Human action is any deliberate behavior or conduct.[6] In acting, all men seek to accomplish certain *ends* which they have discovered are important to them. We will refer to *value* as the subjective and more or less psychically intense appreciation the actor assigns to his end. The *means* is any method the actor subjectively believes suitable for achieving his end. We will use *utility* to indicate the subjective appreciation the actor assigns to the means, depending upon the value of the end he believes the means will permit him to accomplish. In this sense, value and utility are two sides of the same coin, since the actor projects the subjective value he attaches to his end onto the means he believes useful for achieving it, and this is done precisely through the concept of utility.

Scarcity, Plans of Action, and Acts of Will

By definition, means must be scarce, because if they were not scarce, the actor would not even take them into account when acting. In other words, where there is no *scarcity*, there is no human action.[7] Ends and means are never given; on the contrary, they result from the

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http://www.csdl.tamu.edu/cervantes/english/ctxt/DQ_Ormsby/part1_DQ_Ormsby.html (3 December 2003).

[6] On the concept of human action and its main components, see especially Ludwig von Mises, *Human Action: A Treatise on Economics*, 3rd rev. ed. (Chicago: Henry Regnery Company, 1966), 11-29 and 251-256. Mises states precisely: "Every *actor* is always an *entrepreneur* and speculator" (p. 252), and "*Entrepreneur means acting man* in regard to the changes occurring in the market" (p. 254). It may also be helpful to read *Action and Purpose*, by Richard Taylor (New Jersey: Humanities Press, 1980), although, in our view, Taylor fails to emphasize as he should the fact that human action in essence consists of apprehending or discovering new ends and means, more than it does efficiently allocating given means to pre-established ends. Tadeusz Kotarbinski takes the same error even further in *Praxiology, An Introduction to the Sciences of Efficient Action* (Warsaw: Polish Scientific Publishers, 1965).

[7] In this sense, to define economics as "the science which studies human action influenced by scarcity" (Avelino García Villarejo and Javier Salinas Sánchez, *Manual de Hacienda Pública* [Madrid: Editorial Tecnos, 1985], 25) is a clear pleonasm, since all human action presupposes scarcity. As Mises

essential entrepreneurial activity which consists precisely of creating, discovering, or simply recognizing the ends and means that are relevant for the actor in each set of circumstances he encounters in his life. Once the actor feels he has discovered which ends are worthwhile to him and which means are available to enable him to reach those ends, he incorporates both, almost always tacitly,[8] into a *plan* of action,[9] which he adopts and implements owing to a personal act of *will*.[10]

The Subjective Conception of Time: Past, Present, and Future

All human action takes place in *time*, however not in the deterministic, Newtonian, physical, or analogical sense, but in the subjective sense; that is, 'time' as the actor subjectively perceives and experiences it within the context of each action.[11] According to this subjective notion of time, the actor perceives and experiences its passage as he acts; that is, as he creates, discovers, or simply becomes aware of new ends and means, in line with the essence of

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eloquently puts it (*Human Action*, 93), "Where man is not restrained by the insufficient quantity of things available, there is no need for any action."

[8] Later we will explain that the information or knowledge most relevant to human action is very difficult to articulate and is generally of a *tacit*, rather than an explicit, nature.

[9] The *plan* is the prospective mental picture the actor conjures up of the different stages, elements, and circumstances which may have a bearing on his action. Therefore, the plan consists of a personal arrangement of the practical information the actor possesses and progressively discovers within the context of each action. In this sense, we can affirm that, as the actor generates new information, each action entails a continuous process of *individual or personal planning*. *Central planning* is different, and as we shall see, serves the need of the governing body in a socialist system to organize, in a manner as official and coordinated as possible, the means it can make coercive use of to achieve its proposed goal. Central planning fails because the authorities are incapable of obtaining the necessary practical information. Hence, the issue is not whether to plan or not; on the contrary, assuming that *planning* is essential to all human action, the question is who should plan, whether the individual actor, who is the only one who possesses the necessary practical information, or an unrelated, coercive body which lacks this information. See F. A. Hayek's article, "The New Confusion about Planning," in *New Studies in Philosophy, Politics, Economics and the History of Ideas* (London: Routledge and Kegan Paul, 1978), 232-246. Different types of planning can also be categorized as integral, partial, indicative, or individual, and all, with the exception of individual planning, pose an epistemological contradiction which cannot be eliminated, and which we will call "the paradox of planning" (see, in chapter 3, footnote 11 and section c of part 6).

[10] According to Saint Thomas Aquinas, "voluntatis autem motivum et obiectum est finis" (that is, "the end is the cause and the object of the will"). *Summa Theologiae*, pt. 1-2, ques. 7, art. 4, vol. 4 (Madrid: B. A. C., 1954), 301.

[11] On the idea that only a subjective, practical, and dynamic concept of time is applicable to the field of human action and economic science, see chapter 4 of *The Economics of Time and Ignorance*, by Gerald P. O'Driscoll and Mario J. Rizzo (Oxford: Basil Blackwell, 1985), 52-70. This conception of time had already been advanced by Bergson, for whom "La durée toute pure est la forme que prend la succession de nos états de conscience quand notre moi se laisse vivre, quand il s'abstient d'établir une

entrepreneurship as we have explained it. In this way, the past experiences stored in the actor's memory continuously fuse in his mind with his simultaneous, creative view of the future in the form of mental images or *expectations*. This future is never determined, but instead the actor imagines and creates it step by step.

Creativity, Surprise, and Uncertainty

Therefore, the future is always *uncertain*, in the sense that it has yet to be built, and concerning it the actor has only certain ideas, mental images, or expectations which he hopes to realize via his personal action and *interaction* with other actors. Moreover, the future is *open* to all of man's *creative* possibilities, and thus each actor faces it with *permanent uncertainty*, which can be reduced through behavior patterns of his own and others (institutions) and through action and the alert exercise of entrepreneurship. Nevertheless, he will not be able to totally eliminate this uncertainty. The *open* and *unlimited* nature of the uncertainty we are referring to renders both traditional notions of objective and subjective probability, and the Bayesian conception of the latter, inapplicable to the field of human action. This is so for two reasons: first, actors are not even conscious of every possible alternative or case; and second, the actor only possesses certain subjective beliefs or convictions – called by Mises "case probabilities" (of *unique events*)[12] – which, as they are modified or broadened, tend to change by *surprise*, i.e.

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séparation entre l'état present et les états antérieurs." See Henry Bergson, "Essai sur les Donnés Inmédiates de la Conscience," in *Oeuvres* (Paris: Presses Universitaires de France, 1959), 67.

[12] *Human Action*, 110-118. The following table reflects the chief differences which, according to Mises, exist between the concepts of probability applicable to the field of natural science and those applicable to the field of human action:

The Field of Natural Science	*The Field of Human Action*
1. *Class probability*: The behavior of the class is known or knowable, while the behavior of its individual elements is not.	1. *"Probability"* of a unique case or event: class does not exist, and while some of the factors which affect the unique event are known, others are not. Action itself brings about or creates the event.
2. A situation of *insurable risk* exists for the whole class.	2. Permanent *uncertainty* exists, given the creative nature of human action. Uncertainty is not insurable.
3. Probability can be expressed in *mathematical terms.*	3. Probability cannot be expressed in *mathematical terms*.
4. Probability is gauged through logic and *empirical research*. Bayes's theorem makes it possible to estimate the probability of class as new information appears.	4. Probability is discovered through insight and *entrepreneurial estimation*. Each new bit of information modifies *ex novo* the entire map of beliefs and expectations (concept of surprise).

in a radical, divergent manner, the actor's entire "map" of beliefs and knowledge. In this way, the actor constantly discovers totally new situations of which previously he had not even been able to conceive.[13]

Cost as a Subjective Concept. Entrepreneurial Profit

Whenever the actor realizes that he desires a particular end and discovers and selects certain means by which to achieve it, he simultaneously *foregoes* the opportunity to accomplish other, different ends which, *ex ante*, he values less yet believes he could achieve by using the means available to him in a different way. We will employ the term *cost* to indicate the subjective value the actor places on the ends he gives up when he decides to continue and embarks on a certain course of action. In other words, action always implies a sacrifice; the value the actor attaches to what he relinquishes is his cost, and this in essence consists of a purely subjective valuation, estimate, or judgement.[14] As a rule, all people act because they subjectively estimate that the value of the proposed end will be greater than the cost they plan to incur; in other words, because they hope to obtain an entrepreneurial *profit*.[15] Therefore, profit

5. An object of research to the natural *scientist*.	5. A concept typically used by the *actor-entrepreneur* and by the historian.

[13] "Surprise is that dislocation and subversion of received thoughts, which springs from an actual experience outside of what has been judged fully possible, or else an experience of a character which has never been imagined and thus never assessed as either possible or impossible; a *counter-expected* or else an *unexpected* event." G. L. Shackle, *Epistemics and Economics* (Cambridge: Cambridge University Press, 1972), 422. Anglo-Saxons use the term *serendipity* to describe the typically entrepreneurial capacity for recognizing opportunities which crop up by surprise, without being deliberately sought. The word derives etymologically from the Arab term *sarandib*, as Sri Lanka [also previously Ceylon] was formerly known, and Horace Walpole gave the word its current meaning. Walpole first used the term in the eighteenth century and drew his inspiration from the fortuitous discoveries often made by the heroes of "The Three Princes of Serendip," a story of Persian origin. See the letter from Horace Walpole to Mann dated January 28, 1754, in which Walpole points out that the heroes of this story "were always making discoveries, by accidents and sagacity, of things they were not in quest of." He concludes, "this discovery, indeed, is almost of that kind which I call Serendipity." See the *Oxford English Dictionary*, 2nd ed. (Oxford: Clarendon Press, 1983), 15:5. Gregorio Marañón refers to the same idea when he states: "The creation of a genius differs from one of ordinary men in that what he *creates* is something *unexpected* and *surprising*." *El Greco y Toledo, Obras Completas* (Madrid: Espasa Calpe, 1971), 421.

[14] See J. M. Buchanan and G. F. Thirlby, eds., *L. S. E. Essays on Cost* (New York: New York University Press, 1981), esp. 14 and 15.

[15] "Profit, in a broader sense, is the gain derived from action; it is the increase in satisfaction (decrease in uneasiness) brought about; it is the difference between the higher value attached to the result attained and the lower value attached to the sacrifices made for its attainment; it is, in other words, yield minus cost. To make profit is invariably the aim sought by any action." Ludwig von Mises, *Human*

is the gain acquired through human action, and it constitutes the *incentive* which drives or motivates people to act. In actions which do not involve a cost, the subjective value of the end coincides with the profit. We will later argue that all human action includes, without fail, a pure and fundamentally creative entrepreneurial component which does not entail any cost, and that this element is precisely what has led us, in a broad sense, to identify the concepts of human action and entrepreneurship. Furthermore, given that the value of the end always incorporates the profit or gain, from now on we will on many occasions consider "end" to be almost synonymous with "profit," without continually stopping to clarify the aforestated distinction between them.

Rationality and Irrationality. Entrepreneurial Error and Loss

Human action is by definition always *rational*,[16] in the sense that, *ex ante*, the actor invariably seeks and chooses the means he believes most suited to accomplishing the ends he finds worthwhile. The above is undoubtedly compatible with an *ex post* discovery by the actor that he has committed an *entrepreneurial error*; in other words, that he has incurred entrepreneurial *losses* by selecting certain ends or means without noticing the existence of others more valuable to him. Nevertheless, the outside observer can never objectively classify an action as *irrational*, given the essentially subjective nature of ends, costs, and means. Hence, in the field of economics, we can affirm that human action is an *ultimate given* in the sense that it is an *axiomatic* concept which does not require a reference to any other nor any further

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Action, 289. In Mises's view, losses sustained by a company reveal that it is making unsuitable use of scarce resources which are more urgently needed in other lines of production. John Paul II finally appears to have understood this idea perfectly. He states: "When a firm makes a profit, this means that productive factors have been properly employed and corresponding human needs have been duly satisfied." See John Paul II, *Centesimus Annus*, chap. 4, section 35 (1991) http://www.intratext.com/IXT/ENG0214/_P6.HTM (December 9, 2003).

[16] Therefore, economics is not a theory on choice or decision-making (which is, *ex ante*, always rational by definition), but on the social processes of coordination which, regardless of the rational nature of all decisions involved in them, can be well or poorly adjusted, depending upon the awareness the different actors show in their exercise of entrepreneurship. See I. M. Kirzner, *The Meaning of the Market Process*, 201-208. Furthermore, we must stress that the essentially *subjective* character of the components of human action (ends, means, and costs) is precisely what gives economics, in a sense only apparently paradoxical, complete *objectivity*, in that it is a theoretical science with conclusions that are applicable to any sort of action (*praxeology*).

explanation. The axiomatic character of the concept of human action is also manifest, since to criticize or doubt it involves an insoluble logical contradiction, as criticism can only be expressed through (human) *action*.[17]

Marginal Utility and Time Preference

Finally, considering that means are scarce by definition, the actor will tend to first accomplish those ends he values more, and then those which are relatively less important to him. As a result, each unit of means which is available to the actor, and is interchangeable and relevant within the context of his action, he will tend to value in terms of the least important end he believes he can achieve with it (*law of marginal utility*). Moreover, given that action is undertaken with a view to attaining a certain end and that all action takes place in time and thus has a certain duration, the actor will try, *ceteris paribus*, to achieve his end as soon as possible. To put it another way, other things being equal, the actor will always place a higher value on the ends closer to him in time, and he will only be willing to undertake actions of a longer duration if he believes that by doing so he will be able to accomplish ends of greater value to him (*law of time preference*).[18]

2. CHARACTERISTICS OF ENTREPRENEURSHIP

Entrepreneurship and Alertness

Entrepreneurship, in a strict sense, consists basically of discovering and perceiving (*prehendo*) opportunities to achieve an end, or to acquire a gain or profit, and acting accordingly

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[17] Ludwig von Mises, *Human Action*, 19-22. We believe Mises makes an unnecessary concession atypical of him when he asserts that human action will continue to be an ultimate given until it is discovered how the natural outside world determines human thoughts. We not only agree with F. A. Hayek that it is impossible for the human mind to come to explain itself (*The Sensory Order* [Chicago: University of Chicago Press, Midway Reprint, 1976], 184-191), but we also maintain that all determinists fall into an insoluble logical contradiction: as the knowledge they aspire to obtain of how the outside world determines thought is itself determined, then according to their own criteria, it could not be reliable. See M. N. Rothbard, *Individualism and the Philosophy of Social Sciences* (San Francisco: Cato Institute, 1980), 5-10.

[18] That is, neither the law of marginal utility nor that of time preference is an empirical or psychological law; instead, both are logical implications of the fundamental concept of human action.

to take advantage of these opportunities which arise in the environment. Kirzner holds that the exercise of entrepreneurship entails a special *alertness*; that is, a constant *vigilance*, which permits a person to discover and grasp what goes on around him.[19] Perhaps Kirzner uses the English term "alertness" because *entrepreneurship* originates from French and in English does not imply the idea of *prehendo* that it does in the continental romance languages. In any case, the Spanish adjective *perspicaz* is quite appropriate to entrepreneurship, since, as the *Diccionario* of the *Real Academia Española* informs us, it applies to "vision or a gaze which is far-sighted and very sharp."[20] This idea fits in perfectly with the activity the entrepreneur engages in when he decides which actions he will carry out and estimates the future effect of those actions. Though *el estar alerta* may also be an acceptable indication of entrepreneurship, since it involves the notion of attention or vigilance, at any rate, we find it somewhat less fitting than *perspicaz*, perhaps because the former clearly suggests a rather more static approach. At the same time, we must also keep in mind that a striking similarity exists between the alertness a historian must show when selecting and interpreting the important past events which interest him, and the alertness an entrepreneur must show concerning the events he believes will occur in the future. This is why Mises asserts that historians and entrepreneurs employ very similar approaches, and he goes so far as to define "entrepreneur" as someone who looks into the future with the eyes of a historian.[21]

Information, Knowledge, and Entrepreneurship

In order to thoroughly understand the nature of entrepreneurship as we have been approaching it, one must first comprehend the way it modifies or changes the *information* or *knowledge* the actor possesses. The perception or recognition of new ends and means implies a modification of the actor's knowledge, in the sense that he discovers new information.

According to Mises, "the Law of Marginal Utility is already implied in the category of action" and "time preference is a categorical requisite of human action." Mises, *Human Action*, 124 and 484.

[19] Israel M. Kirzner, *Competition and Entrepreneurship*, 65 and 69.

[20] "*La vista or mirada muy aguda y que alcanza mucho*."

[21] "Acting man looks, as it were, with the eyes of a historian into the future." *Human Action*, 58.

Moreover, this discovery modifies the entire map or context of information or knowledge the subject possesses. Let us ask the following fundamental question: What are the characteristics of the information or knowledge which is relevant to the exercise of entrepreneurship? We will study in detail six basic features of this type of knowledge: 1) It is *subjective* and *practical*, rather than scientific, knowledge. 2) It is *exclusive* knowledge. 3) It is *dispersed* throughout the minds of all men. 4) It is mainly *tacit* knowledge, and therefore not expressed in words. 5) It is knowledge created *ex nihilo*, from nothing, precisely through the exercise of entrepreneurship. And 6) It is knowledge which can be *transmitted*, for the most part unconsciously, via extremely complex social processes, the study of which is the object of research in economics.

Subjective and Practical, Rather than Scientific, Knowledge

The knowledge we are analyzing, that most crucial to the exercise of human action, is above all *subjective* and *practical*, not scientific. Practical knowledge is any that cannot be represented in a formal manner, and that is instead progressively acquired by the subject through practice, i.e. through human action itself in its different contexts. As Hayek maintains, it is knowledge that is significant in all sorts of *particular circumstances*, or different sets of specific, subjective coordinates of time and place.[22] In short, we are referring to knowledge in

[22] Saint Thomas Aquinas defines particular circumstances as "accidentia individualia humanorum actuum" (that is, the individual accidents of human acts), and he affirms that, besides time and place, the most significant of these particular circumstances is the end the actor seeks to accomplish ("principalissima est omnium circunstantiarum illa quae attingit actuum ex parte finis"). See *Summa Theologiae*, pt. 1-2, ques. 7, art. 1 and 2, vol. 4 (Madrid: B. A. C., 1954), 293-294, 301. We should also point out that credit goes to Michael Oakeshott for drawing the distinction between "practical knowledge" and "scientific knowledge." (See *Rationalism in Politics* [London: Methuen, 1962]. This book has been beautifully republished in an expanded version entitled *Rationalism in Politics and Other Essays* [Indianapolis: Liberty Press, 1991]; see especially pages 12 and 15. Also essential is Oakeshott's *On Human Conduct* [Oxford: Oxford University Press, 1975], reprinted [Oxford: Clarendon Paperbacks, 1991], 23-25, 36, 78-79, 119-121.) Oakeshott's distinction parallels the one Hayek notes between "dispersed knowledge" and "centralized knowledge," the one Michael Polanyi emphasizes between "tacit knowledge" and "articulate knowledge," and the aforementioned one Mises makes between knowledge of "unique events" and knowledge of the behavior of an entire "class of phenomena." The following table summarizes the various approaches of these four authors to the two different basic types of knowledge:

Two Different Types of
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the form of concrete human appraisals, information regarding both the ends the actor pursues and those ends he believes other actors pursue. This knowledge also consists of practical information on the means the actor believes are available to him and can enable him to attain his ends, especially information about all of the conditions, whether personal or otherwise, which the actor feels may be of importance within the context of any concrete action.[23]

	TYPE A	TYPE B
Oakeshott	Practical (Traditional)	Scientific (or Technical)
Hayek	Dispersed	Centralized
Polanyi	Tacit	Articulate
Mises	of "Unique Events"	of "Classes"

ECONOMICS
(Type B knowledge of type A knowledge)

The relationship between the two sorts of knowledge is complex and has been little studied. All scientific knowledge (type B) rests on a foundation of tacit knowledge that cannot be expressed in words (type A). Moreover, scientific and technical advances (type B) promptly result in new, more productive and powerful practical knowledge (type A). Likewise, economics amounts to type B (scientific) knowledge of the processes of creation and transmission of practical knowledge (type A). Now it is clear why Hayek maintains that the main risk in economics as a science lies in the danger that, as it consists of theorizing about type A knowledge, people could come to believe that those who practice it ("economic scientists") are somehow capable of gaining access to the specific content of type A practical knowledge. Scientists could even go so far as to completely disregard the specific content of practical knowledge, as has been so rightly criticized by Oakeshott, for whom the most dangerous, exaggerated, and erroneous version of rationalism would consist of "the assertion that what I have called practical knowledge is not knowledge at all, the assertion that, properly speaking, there is no knowledge which is not technical knowledge" (Michael Oakeshott, *Rationalism in Politics and Other Essays*, 15).

[23] See especially F. A. Hayek's seminal articles, "Economics and Knowledge" (1937) and "The Use of Knowledge in Society" (1945), which appear in the book *Individualism and Economic Order* (Chicago: Henry Regnery, 1972), 35-56, 77-91. It is important to point out that these two articles of Hayek's are among the most crucial in economics. Nevertheless, particularly the first one reveals that when it was written a certain confusion still existed in the mind of its author as to the nature of economics as a science. Indeed, it is one thing to maintain that economics basically studies the processes involved in the transmission of practical information, the concrete content of which depends on the circumstances specific to each point in time and to each place, and it is quite another to suggest, as Hayek appears to mistakenly do in some places, that economics is therefore a science with a certain empirical content. Quite the opposite is true: the fact that the scientist can never gain access to the dispersed practical information those observed possess is precisely what makes economics essentially and inevitably a *theoretical*, rather than empirical, science. It is a science which studies the *form* but not the specific content of the entrepreneurial processes by which practical information is created and transmitted (processes which, as an object of estimation and research, correspond to the historian or the entrepreneur, depending upon whether the past or the future is of interest). Israel M. Kirzner, in his outstanding article, "Hayek, Knowledge and Market Processes" (in *Perception, Opportunity and Profit*, 13-33), makes the same critical observation of Hayek from a slightly different perspective.

Exclusive and Dispersed Knowledge

Practical knowledge is exclusive and dispersed. This means that each actor possesses only a few "atoms" or "bits" of all of the information generated and transmitted in society,[24] and that paradoxically, only he possesses these bits; in other words, only he accesses and interprets them consciously. Hence, each man who acts and exercises entrepreneurship does so in a strictly *personal and unrepeatable* manner, since he begins by striving to achieve certain ends or objectives that correspond to a vision of the world and a body of knowledge concerning it, both of which only he possesses in all of their richness and diverse nuances, and which no other human being can possess in identical form. Therefore, the knowledge we are referring to is not *given* and accessible to everyone via some material means of storing information (newspapers, journals, books, computers, etc.). On the contrary, the knowledge relevant to human action is fundamentally practical and strictly exclusive, and it is only "found" *diffused* throughout the minds of each and every one of the men and women who act and comprise society. In Figure II-1, we will introduce some amiable stickmen who will accompany us all through this book with the sole purpose of helping to more graphically illustrate our analysis.[25]

[Stickmen A and B]

Figure II-1

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[24] Thomas Sowell, *Knowledge and Decisions* (New York: Basic Books, 1980), 3-44. We should mention, however, that in our opinion, Sowell is still heavily influenced by the neoclassical conception of equilibrium and has not yet properly understood the role of entrepreneurship. On this topic, see I. M. Kirzner, "Prices, the Communication of Knowledge and the Discovery Process," in *The Political Economy of Freedom: Essays in Honor of F. A. Hayek* (Munich: Philosophia Verlag, 1984), 202-203.

[25] Without doubt, when he wrote the following, Adam Smith was aware that practical knowledge is basically diffuse or dispersed knowledge: "What is the species of domestick industry which his capital can employ, and of which the produce is likely to be of the greatest value, *every individual, it is evident, can, in his local situation, judge much better than any statesman or lawgiver can do for him*." (Italics added.) However, Smith failed to express the idea with total clarity (each individual not only knows "much better," but is the *only one* perfectly familiar with his own particular circumstances). Furthermore, Smith was unable to carry his idea to its logical conclusion with respect to the impossibility of safely entrusting a central authority with all human affairs. (Smith believed that any statesman who attempted to assume such responsibility would "load himself with a most unnecessary attention," though he would not face a logical impossibility.) *An Inquiry into the Nature and Causes of the Wealth of Nations*, The Glasgow Edition, (Indianapolis: Liberty Classics, 1981), 1:456, paragraph 10. It is very difficult to graphically illustrate the processes by which practical and dispersed information is transmitted, and we have chosen to depict these processes using the genial stick figures from the text. We hope our stickman analysis gains enthusiastic acceptance in the economic science of the future.

We intend the stickmen in this figure to symbolize two *real*, flesh-and-blood *human beings* whom we will call "A" and "B". Each of the people "A" and "B" represent possesses some personal or exclusive knowledge, i.e. knowledge the other does not have. In fact, we can see from our viewpoint as outside observers in this case that knowledge "exists" which an outside observer does not possess, and which is dispersed between "A" and "B", in the sense that "A" has one part of it, and "B" has the other. For example, let us suppose the information "A" possesses is that he plans to achieve an end, "X" (represented by the arrow that points toward "X" above his head), and to help him accomplish this end, he has certain practical knowledge relevant within the context of his action (a body of practical knowledge or information represented by the halo of short lines which surrounds the head of "A"). The case of "B" is similar, except that he pursues a completely different goal, "Y" (represented by an arrow at his feet which points toward "Y"). The body of practical information which actor "B" considers relevant in the context of his action, an action he performs to achieve "Y", is likewise represented by a halo surrounding his head.

In the case of many simple actions, an actor individually possesses the information necessary to reach his goal without needing to involve other actors at all. In such situations, whether or not an action is undertaken depends upon an *economic calculation* or appraisal the actor makes by *directly* comparing and weighing the subjective value of his end against the cost, or the value he attaches to that which he would relinquish should he pursue the chosen end. The actor is able to make this type of decision directly with respect to only a few, very simple actions. Most of the actions in which we are involved are much more complex and of the sort we will now describe. Let us imagine, just as we have shown in Figure II-1, that "A" fervently wishes to achieve the objective "X", but to do so he requires a means, "R", which is unavailable to him and which he *does not know* where nor how to obtain. Let us also suppose that "B" is in another place, that he strives for a very different goal (the end "Y"), to which he dedicates all of his efforts, and that he knows or "knows of" or has available to him a large quantity of the resource "R", which he does not find useful or suitable for achieving his end, but which happens to be what "A" would need to reach his desired objective ("X"). In fact, we should point out

that "X" and "Y" are *contradictory*, as in most real cases; that is, the actors pursue different ends, with different levels of intensity, and with disparate or maladjusted relative knowledge about these ends and about the means at their disposal (which explains the dejected expressions we have drawn on the faces of our stick figures). Later we will see how the exercise of entrepreneurship makes it possible to overcome these contradictory or discoordinated behaviors.

Tacit Knowledge Which Cannot Be Articulated

Practical knowledge is mainly *tacit* knowledge *which cannot be articulated*. This means that the actor knows how to perform certain actions (*know how*), but he cannot identify the elements or parts of what he is doing, nor whether they are true or false (*know that*).[26] For example, when someone learns to play golf, he does not learn a set of objective, scientific rules which allow him to make the necessary movements through the application of a series of formulas from mathematical physics. Instead, the learning process consists of conforming to a number of *practical behavior patterns*. We could also cite, following Polanyi, the example of a person who, learning to ride a bicycle, attempts to maintain his balance by moving the handlebars to the side toward which he begins to fall and creating in this way centrifugal force which tends to keep the bicycle upright, yet almost no cyclist is aware of or familiar with the physical principles behind his *ability*. On the contrary, what the cyclist actually uses is his "sense of balance," which in some way tells him how to behave at each moment to keep from falling. Polanyi goes so far as to assert that tacit knowledge is in fact *the dominant principle of all knowledge*.[27] Even the most highly formalized and scientific knowledge invariably follows

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[26] This distinction has become common since Gilbert Ryle drew it back in 1949 in his well-known article, "Knowing How and Knowing That," contained in *The Concept of Mind* (London: Hutchinson's University Library, 1949).

[27] Michael Polanyi, *The Study of Man* (Chicago: University of Chicago Press, 1959), 24-25. All economics scholars should read this little book, which is a true jewel of social science. Other important works by Polanyi include *The Logic of Liberty*, *Personal Knowledge*, and *Knowing and Being*, all published by the University of Chicago Press (Chicago, 1951, 1958, and 1969 respectively). Michael Polanyi (1891-1976) – the brother of Karl Polanyi (1886-1964) – was a man of very broad horizons, and he carried out his scientific work in the fields of chemistry, philosophy, politics, sociology, and economics. The bicycle example is found on page 144 of *Knowing and Being*. Polanyi traces the idea of a limited capacity to articulate human thought back to certain contributions originally made in the field of mathematics, and especially to the work of Kurt Gödel. See *Personal Knowledge*, 259. For his part,

from an intuition or an act of creation, which are simply manifestations of tacit knowledge. Moreover, the new formalized knowledge we can acquire through formulas, books, charts, maps, etc. is important mainly because it helps us to reorganize our entire framework of information from different, richer, and more valuable perspectives, which in turn opens up new possibilities for the exercise of creative intuition. Therefore, the impossibility of articulating practical knowledge is expressed not only "statically," in the sense that any apparently articulated statement contains information only insofar as it is interpreted through a combination of beliefs and knowledge that cannot be expressed in words, but also "dynamically," since the *mental process* used in any attempt at articulation is itself essentially tacit knowledge which cannot be articulated.[28]

We must emphasize that all tacit knowledge is, by its own nature, difficult to articulate. If we ask a young woman who has just purchased a skirt of a certain color why she chose it, she will most likely answer, "just because," or simply, "because I liked it," without being able to offer us a more detailed and formalized explanation for her choice. Another type of knowledge that cannot be articulated and that plays an essential role in the functioning of society is represented by the set of *habits*, *traditions*, *institutions*, and juridical *rules* which comprise the law, which make society possible, and which human beings learn to follow, though they cannot theorize about them nor detail the precise function these rules and institutions perform in the

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Hayek affirms that "Gödel's theorem is but a special case of a more general principle applying to all conscious and particularly all rational processes, namely the principle that among their determinants there must always be some rules which cannot be stated or even be conscious." See F. A. Hayek, "Rules, Perception and Intelligibility," in *Studies in Philosophy, Politics and Economics* (New York: Simon and Schuster, 1969), 62. Gödel develops his theorem in "Über formal unentscheidbare Sätze der *Principia Mathematica* und verwandter Systeme I," *Monatshefte für Mathematik und Physik*, no. 38 (1931): 173-198. (An English translation appears in the *Collected Works of Kurt Gödel* (Oxford: Oxford University Press, 1986), 1:145-196.

[28] In the same line of thought, we have derived great satisfaction from reading Roger Penrose's magnificent book, *The Emperor's New Mind: Concerning Computers, Minds and the Laws of Physics* (Oxford: Oxford University Press, 1989), in which he explains in detail, in several instances, how very important thought which cannot be expressed in words is even for the most illustrious scientific minds (for example, see pages 423-425). Gregorio Marañón, the brilliant Spanish doctor and writer, presented this idea years ago when relating a private conversation he had with Bergson shortly before his death, a conversation in which the French thinker stated: "I am sure that Cajal's great discoveries were no more than the objective verification *of facts that his brain had foreseen* as actual realities." "Cajal y su Tiempo," in *Obras Completas* (Madrid: Espasa Calpe, 1971), 7:331. For his part, K. Lorenz asserts that "No important scientific fact has ever been 'proved' that has not previously been simply and immediately

various situations and social processes in which they are involved. The same can be said about *language* and also, for instance, about the *financial and cost accounting* which entrepreneurs use as a guide for their actions and which consists simply of practical knowledge or techniques that, in the context of a specific market economy, provide entrepreneurs with common guidelines for reaching their goals, even though most entrepreneurs are unable to formulate a scientific theory of accounting, let alone explain how it helps in the complicated processes of coordination which make life in society possible.[29] Hence, we may conclude that the exercise of entrepreneurship as we have defined it (the capacity for discovering and perceiving opportunities for profit and consciously acting to take advantage of them) essentially amounts to tacit knowledge which cannot be articulated.

The Fundamentally Creative Nature of Entrepreneurship

The exercise of entrepreneurship does not require any means. That is to say, entrepreneurship does not entail any costs and is therefore essentially creative.[30] This creative aspect of entrepreneurship is embodied in its production of a type of profit which, in a sense, arises out of nothing, and which we will refer to as *pure entrepreneurial profit*. To derive entrepreneurial profit, one needs no prior means, but only to exercise entrepreneurship well. To illustrate this point, let us go back to the situation Figure II-1 represented. The simple *realization* that a state

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seen by intuitive *Gestalt* perception." See "The Role of Gestalt Perception in Animal and Human Behaviours," in *Aspects of Form* (London: L. L. Whyte, 1951), 176.

[29] Don Lavoie, *Rivalry and Central Planning* (Cambridge: Cambridge University Press, 1985). Lavoie adds that if costs could be established objectively, scientifically, and universally, decision-making in economic life could be limited to obedience to a set of wholly articulated and specific rules. However, given that costs are subjective and can only be known by the actor in the context of each specific action, the practice of entrepreneurship cannot be articulated in detail nor replaced by any objective scientific criterion (Ibid., 103-104).

[30] According to Saint Thomas Aquinas, "creare est aliquid ex nihilo facere" (i.e. to create is to make something out of nothing). *Summa Theologiae*, pt. 1, ques. 45, art. 1 and following, vol. 2 (B.A.C., 1948), 740. We cannot agree with the Thomist thesis that only God is capable of creating, since human beings also create constantly whenever they exercise entrepreneurship. Aquinas uses the term *ex nihilo* in an excessively materialistic sense, whereas we consider that *ex nihilo* creation takes place each time someone perceives or realizes something he had not even conceived of before (Ibid., 756). Although he sometimes confuses the concept of human action with that of "work" (see also footnote 31), Pope John Paul II appears to favor our interpretation in his encyclical *Laborem Exercens*, when he states that man "reflects the very action of the Creator of the universe" (nos. 4 and 25 [1981] http://www.vatican.va/holy_father/john_paul_ii/encyclicals/documents/hf_jp-ii_enc_14091981_laborem-exercens_en.html [December 10, 2003]).

of *maladjustment or discoordination* exists between "A" and "B" is enough to immediately spark an opportunity for pure entrepreneurial profit.[31] In Figure II-2, we suppose that a third party, in this case "C," is the one who exercises entrepreneurship, and that he does so upon discovering the profit opportunity inherent in the maladjustment or discoordination present in Figure II-1. (We use a light bulb to show that "C" recognizes this opportunity. As is logical, in practice, entrepreneurship could be exercised by "A" or "B" or both simultaneously, with the same or differing intensities, though for our purposes it is more illustrative to consider the third party "C" to be the one who exercises entrepreneurship in this case.)

[Stickmen A, C, and B]

Figure II-2

In fact, "C" needs only to contact "B" and offer to buy for a certain quantity, let us say three monetary units, the resource so abundantly available to "B," who attaches practically no importance to it. "B" will be enormously pleased, since he never could have imagined receiving so much for his resource. Following this exchange, "C" can contact "A" and sell him this resource, which "A" so urgently needs to achieve the end he is pursuing. "C" might sell "A" the resource for nine monetary units, for instance. (If "C" lacks money, one way for him to obtain it would be to convince someone to lend it to him temporarily.) Thus, through the exercise of entrepreneurship, "C" derives, *ex nihilo*, a pure entrepreneurial profit of six monetary units.[32]

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[31] We believe all human action has an essentially creative component and that no basis exists for distinguishing between entrepreneurial creativity in the economic realm and creativity in other human spheres (artistic, social, etc.). Nozick mistakenly draws just such a distinction, as he fails to realize that *the essence of creativity is the same in all areas*, and that the concept and characteristics of entrepreneurship, both of which we are analyzing, apply to all human action, regardless of the type. See Robert Nozick, *The Examined Life* (New York: Simon and Schuster, 1989), 40.

[32] The fact that entrepreneurship is distinctly creative and that therefore pure entrepreneurial profits arise from nothing can lead us to the following *theological digression*: if we accept for the sake of argument that a *Supreme Being* exists, one who created all things from nothing, then when we suppose entrepreneurship to be an *ex nihilo* creation of pure entrepreneurial profits, it seems clear that man resembles God precisely when man exercises pure entrepreneurship! This means that man, more than *homo sapiens*, is *homo agens* or *homo empresario*, and that more than when he thinks, he resembles God when he acts, i.e. when he conceives and discovers new ends and means. We could even construct an entire theory of *happiness*, a theory which would suggest that man is happiest when he resembles his Creator. In other words, the cause of the greatest happiness in man would be to recognize and reach his objectives (which implies action and the exercise of entrepreneurship). Nevertheless, at times we

It is particularly important at this point to emphasize that the above act of entrepreneurship has produced three extraordinarily significant effects. First, entrepreneurship has created new information which did not exist before. Second, this information has been transmitted throughout the market. Third, the above entrepreneurial act has taught the economic agents involved to tune their behavior to that of the others. These consequences of entrepreneurship are so important that they are worth studying closely one by one.

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undoubtedly commit multiple *entrepreneurial errors*, above all with respect to the choice of ends to pursue. (Fortunately, man is not lost but has certain guides, such as ethics and religion, to help him in this area.) I hope my digression will not appear to Professor Kirzner, a man of profound religious convictions, as "a sacrilegious use of theological metaphor." See Israel M. Kirzner, *Discovery, Capitalism, and Distributive Justice* (Oxford: Basil Blackwell, 1989), 40. As we mentioned in footnote 29, Pope John Paul II, in his encyclical *Laborem Exercens* (nos. 4 and 25 [1981] http://www.vatican.va/holy_father/john_paul_ii/encyclicals/documents/hf_jp-ii_enc_14091981_laborem-exercens_en.html [December 10, 2003]), appears to lean toward our interpretation when he affirms that man imitates and "reflects the very action of the Creator of the universe," that he truly cooperates with God and participates in the divine plan and in the work of the Creator. Nevertheless, John Paul II sometimes seems to confuse the concept of "human action" with that of "work," thus introducing a nonexistent dichotomy of human actions (those related to "work" *stricto sensu* and those related to "capital"). The true social issue is not the contradiction between "work" and "capital," but the question of whether it is legitimate to systematically commit institutional aggression or violence against the creative capacity man exercises when he acts, and the matter of what type of rules and laws should govern all action. Moreover, the author of the encyclical fails to realize that if he is referring to human action in general, it makes no sense to speak (as he does in no. 19) of the right to receive "just remuneration," since every actor has the right, as we will see, to the complete outcome (whether profit or loss) of his entrepreneurial creativity or action; and if the author is referring to work in a strict sense, as a factor of production, any creative possibility related to it is theoretically eradicated. In preparing these reflections, we found to be of great use an article by Fernando Moreno entitled "El Trabajo según Juan Pablo II," in *Cristianismo, Sociedad Libre y Opción por los Pobres*, ed. Eliodoro Matte Larrain (Chile: Centro de Estudios Públicos, 1988), 395-400. The conception John Paul II has of entrepreneurial ability or creative human action as a decisive factor in life in society, or at least his language and articulation on the topic, improved notably in his later encyclical, *Centesimus Annus*, where he expressly states that the determining factor is "man himself, that is, his *knowledge*," both scientific knowledge and practical knowledge (that necessary to "perceive the needs of others and to satisfy them"). These types of knowledge enable humans to "express their creativity and develop their potential," as well as to enter that "network of knowledge and intercommunication" which constitutes the market and society. John Paul II concludes: "The role of disciplined and *creative* human work [we prefer "human action"] and, as an essential part of that work, [of] *initiative* and *entrepreneurial* ability becomes increasingly evident and decisive" (John Paul II, *Centesimus Annus*, chap. 4, sections 31, 32, and 33 [1991] http://www.intratext.com/IXT/ENG0214/_P6.HTM [December 9, 2003]). Without a doubt, the encyclical *Centesimus Annus* reveals that the Supreme Pontiff has enormously modernized his conception of economics and has taken a large qualitative step forward from a scientific standpoint, thus rendering outdated much of the Church's former social doctrine. His updated perspective even surpasses broad sectors within economic science itself, groups which remain anchored to mechanicism and have not been able to introduce into their "models" the essentially creative and dynamic nature of entrepreneurship. See Michael Novak, *The Catholic Ethic and the Spirit of Capitalism* (New York: Free Press, 1993).

The Creation of Information

Each entrepreneurial act entails the *ex nihilo* creation of new information. This creation takes place in the mind of the person, represented by stick figure "C" in our example, who first exercises entrepreneurship. Indeed, when "C" realizes that a situation such as the one described exists involving "A" and "B," new information that he did not possess before is created in his mind. Furthermore, once "C" acts and contacts "A" and "B," new information is also created in the minds of "A" and "B." Thus, "A" realizes that the resource he lacked and needed so urgently to accomplish his end is available elsewhere in the market in greater quantities than he thought, and that therefore he can now readily undertake the action he had not initiated before due to the absence of this resource. For his part, "B" realizes that the resource he so abundantly possesses yet did not value is keenly desired by other people, and that therefore he can sell it at a good price. Moreover, part of the new practical information which originates in the mind of "C" with the exercise of entrepreneurship, and which later springs up in the minds of "A" and "B," is collected in a highly summarized or compressed form in a series of *prices* or historical ratios of exchange (i.e. "B" sold for three monetary units and "A" bought for nine).

The Transmission of Information

The entrepreneurial creation of information implies its *transmission* in the market. Indeed, to transmit something to someone is to cause that person to generate in his mind part of the information which we create or discover beforehand. Strictly speaking, though our example has contained the transmission to "B" of the idea that his resource is important and that he should not waste it, and to "A" of the idea that he can go ahead in the pursuit of the goal he had set himself yet failed to work toward due to the lack of this resource, more has been communicated. In fact, the respective prices, which constitute a highly powerful system of transmission, since they convey a large amount of information at a very low cost, communicate in successive waves to the entire market or society the message that the resource in question should be saved and husbanded, since there is a demand for it, and at the same time, that all those who, owing to a belief that this resource does not exist, are refraining from undertaking

certain actions, can obtain the resource and go ahead with their corresponding plans of action. As is logical, the important information is always subjective and does not exist beyond the people who are capable of interpreting or discovering it, so it is always human beings who create, perceive, and transmit information. The erroneous notion that information is objective stems from the fact that part of the subjective information which is created via entrepreneurship is expressed "objectively" in signs (prices, institutions, rules, "firms," etc.) which can be discovered and subjectively interpreted by many within the context of their particular actions, thus facilitating the creation of new, richer, and more complex subjective information. Nevertheless, despite appearances, the transmission of social information is basically tacit and subjective; that is, the information is not expressly articulated, and it is conveyed in a highly abridged manner. (Indeed, the minimum amount essential for coordinating the social process is subjectively communicated and received.) The above enables people to make the best possible use of the human mind's limited capacity to constantly create, discover, and transmit new information.

The Learning Effect: Coordination and Adjustment

Finally, we must draw attention to the way in which agents "A" and "B" have learned to act in tune with each other. "B," as a result of the entrepreneurial action originally undertaken by "C," no longer squanders the resource available to him, but conserves it instead, acting in his own interest. As "A" can then count on employing this resource, he is able to achieve his end, and he embarks on the action he had refrained from performing before. Hence, both learn to act in a *coordinated manner*; that is, to discipline themselves and modify their behavior in terms of each other. Moreover, they learn in the best way possible: *without realizing they are learning* and *motu proprio*; in other words, voluntarily and within the context of a plan in which each pursues his particular ends and interests. This alone is the *core* of the simple, effective, and

marvelous process which makes life in society possible.[33] Finally, we observe that the exercise of entrepreneurship by "C" not only permits a coordinated action previously absent between "A" and "B," but also allows both to make an *economic calculation* within the context of their respective actions, using data or information which was unavailable to them before and which makes them much more likely to successfully reach their objectives. In short, the information generated in the entrepreneurial process is precisely what enables each actor to make an economic calculation. Without the exercise of entrepreneurship, the information necessary for the actors to properly calculate or estimate the value of each alternative course of action is not created. In brief, *without entrepreneurship, economic calculation is impossible*.[34]

The above observations constitute both the most important and the most fundamental teachings of social science, and they allow us to conclude that entrepreneurship is undoubtedly the quintessential social function, given that it makes life in society possible by adjusting and

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[33] As we will see when we cover arbitration and speculation, human beings learn through entrepreneurship to condition their behavior even upon the circumstances and needs of future people not yet born (*intertemporal coordination*). Furthermore, this process could not be reproduced even if human beings, either obeying the coercive orders of a benevolent dictator or through their own philanthropic desire to help humanity, were to try to *deliberately* adjust all situations of social discoordination, yet refrain from seeking and taking advantage of any profit or gain. In fact, in the absence of gain or profit to serve as an incentive, the practical information necessary for people to act and coordinate situations of social maladjustment does not even appear. (This is independent of an actor's possible decision to use his entrepreneurial profit for charitable purposes, once it has been sought and obtained.) A society whose members dedicated most of their time to "deliberately helping their fellow man" and not to exercising entrepreneurship would be a tribal, precapitalist society, one incapable of supporting a fraction of the population which inhabits the world today. Thus, it is theoretically impossible for the principles of "solidarity" and altruism to serve human beings as a guide for action in an order which, like the social one, rests on a series of abstract relationships with multiple other individuals whom one can never come to know and about whom one only perceives dispersed information and signs in the form of prices, substantive or material rules, and institutions. The principles of "solidarity" and altruism are therefore tribal atavisms which can only be applied in small primary groups and between a very limited number of participants, who share an intimate knowledge of each other's personal circumstances. Although nothing can be said against the activities many people engage in within society to satisfy their more or less atavistic or instinctive need to appear supportive or altruistic toward their "fellow man," we can categorically affirm that not only is it theoretically impossible to coercively organize society based on the principles of "solidarity" and altruism, but such an attempt would do away with civilization as we now know it and eliminate fellow men, both close and distant, such that very few potential recipients of help would remain. See F. A. Hayek, *The Fatal Conceit*, 13.

[34] The term "calculation" derives etymologically from the Latin expression *calx-calcis*, the meanings of which include the lime chalk which was used in Greek and Roman abacuses. A more precise definition of economic calculation appears ahead (in the section entitled "Law, Money, and Economic Calculation").

coordinating the individual behaviors of its members. Without entrepreneurship, it is impossible to conceive of the existence of any society.[35]

Arbitration and Speculation

From a temporal standpoint, entrepreneurship can be practiced in two different ways: synchronically or diachronically. The first is called *arbitration* and is entrepreneurship exercised in the *present* (understood as the temporal present from the actor's point of view)[36] between two distinct places or situations in society. The second is called *speculation* and consists of the exercise of entrepreneurship between two different points in time. One might think that entrepreneurship, in the case of arbitration, amounts to discovering and transmitting information which *already exists* but which is dispersed, while in the case of speculation, "new" information is created and transmitted. Nevertheless, this distinction is purely artificial, because discovering what "already existed," though no one knew it existed, is synonymous with *creating*. Thus, qualitatively and theoretically speaking, there is no difference between arbitration and speculation. Both types of entrepreneurship give rise to social coordination (*intratemporal* in the case of arbitration and *intertemporal* in the case of speculation) and *create* the same sort of trends toward adjustment and coordination.

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[35] Kirzner maintains that entrepreneurship permits the discovery and elimination of the *errors* which occur in society and go unnoticed. However, we find this conception of "error" less than completely satisfactory, since it implies a judgement from the position of a hypothetical omniscient being familiar with all of the situations of maladjustment that arise in society. From our point of view, it only makes sense to speak of "error" in subjective terms; in other words, whenever the actor realizes, *a posteriori*, that he should not have striven for a certain goal, or that he should not have used certain means, since by acting he has incurred costs. He has foregone the achievement of ends of higher value to him than those he has accomplished (that is, he has sustained *entrepreneurial losses*). Moreover, we must remember that the elimination of an *error* in Kirzner's objectivist sense is generally perceived by an actor as a fortunate, wise decision which leads to significant gains or entrepreneurial profits. Israel M. Kirzner, "Economics and Error," in *Perception, Opportunity and Profit* (Chicago: The University of Chicago Press, 1979), 120-137.

[36] "The present qua duration is the continuation of the conditions and opportunities given for acting. Every kind of action requires special conditions to which it must be adjusted with regard to the aims sought. The concept of present is therefore different for various fields of actions." Ludwig von Mises, *Human Action*, 101.

In our illustrated example, "C" could not easily have exercised his creative entrepreneurship if any person had had the power to seize the result of it *by force*; or, for example, if "A" or "B" had *deceived* him and failed to turn over the resource or the promised monetary units. This means that the exercise of entrepreneurship, and of human action in general, requires of the people involved a constant and repetitive adherence to certain standards or rules of conduct; in other words, they must *comply with the law*. This law is composed of a series of behavior patterns which have evolved and become more refined through custom. These patterns basically define property rights (*several property*, in recent Hayekian terminology[37]), and they can be reduced to the following essential principles: respect for life, stability of peacefully acquired possession, transference by consent, and fulfillment of promises.[38] We could adopt three different but complementary viewpoints to examine the foundation of the legal rules which make life in society possible: utilitarianism, evolutionism and custom, and the theory of the social ethics of property rights. Nevertheless, this type of analysis far exceeds the scope of this project, and therefore we will simply point out that, while the law makes possible the exercise of human action, and hence also the emergence and development of society and civilization, the law is at the same time an evolutionary product of the exercise of entrepreneurship itself and is consciously designed by no one. Juridical institutions, and in general all social institutions (language, money, the market, etc.), arise from evolutionary processes in which a vast number of people individually contribute throughout history their own small bit of practical information and entrepreneurial creativity and thus spontaneously give rise, in accordance with Menger's well-known theory, to institutions[39]

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[37] F. A. Hayek, *The Fatal Conceit: The Errors of Socialism*, 12.

[38] "We have now run over the three fundamental laws of nature, *that of the stability of possession, of its transference by consent*, and *of the performance of promises*. 'Tis on the strict observance of those three laws, that the peace and security of human society entirely depend; nor is there any possibility of establishing a good correspondence among men, where these are neglected. Society is absolutely necessary for the well-being of men; and these are as necessary to the support of society." David Hume, *A Treatise of Human Nature*, bk. 3, pt. 2, sec. 6 (Oxford: Oxford University Press, 1981), 526.

[39] We consider an institution to be any repetitive pattern, rule, or model of conduct, regardless of its sphere – linguistic, economic, legal, etc.

which are without a doubt the product of the *interaction* between many people, though *these institutions have not been consciously designed nor organized by any person*.[40] This is so because no human mind nor organized group of human minds possesses the intellectual capacity necessary to take in nor to understand the enormous volume of practical information which has come into play in the gradual formation, consolidation, and later development of these institutions. Thus the paradoxical truth that those institutions (linguistic, economic, legal, and moral) which are most important and essential to the life of man in society could not be deliberately created by man himself, since he lacks the necessary intellectual capacity. Instead they have gradually emerged from the entrepreneurial process of human interaction, and they have spread to broader and broader groups through the unconscious mechanism of learning and imitation explained above. Moreover, the emergence and refinement of institutions makes possible, through a typical feedback process, an increasingly rich and complex entrepreneurial process of human interaction. For the same reason man has been unable to deliberately create his institutions,[41] he is also unable to fully comprehend the overall role which the existing ones

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[40] Carl Menger, *Untersuchungen über die Methode der Socialwissenschaften und der Polistichen Ökonomie insbesondere* (Leipzig: Duncker Humblot, 1883). The term Menger uses to express the "unintended consequences of individual actions" is *Unbeabsichtigte Resultante*. Specifically, Menger states that the social phenomenon is characterized by the fact that it arises as "die unbeabsichtigte Resultante individueller, d.i. individuellen Interessen verfolgender Bestrebungen der Volksglieder ... die unbeabsichtigte soziale Resultante individuell teleologischer Faktoren" (p. 182). See Lawrence H. White's prologue to the English edition of Menger's book, *Investigations into the Method of the Social Sciences with Special Reference to Economics* (New York: New York University Press, 1985), vii-viii, 158 (where we find page 182 of the original German edition translated into English). See also F. A. Hayek's article, "The Results of Human Action but not of Human Design," in *Studies in Philosophy, Politics and Economics*, 96-105. Sometimes Adam Ferguson is recognized as the first to explicitly refer to this spontaneous type of social phenomena. In fact, on page 187 of his *An Essay on the History of Civil Society* (London: T. Caddel in the Strand, 1767), we read: "Nations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design." He adds the famous phrase attributed by De Retz to Cromwell, according to whom man never reaches greater heights than when he does not know where he is going ("on ne montait jamais si haut que quand on ne sait pas où l'on va"). However, Ferguson is following a much older tradition, which through Montesquieu, Bernard de Mandeville, and the sixteenth-century Spanish scholastics, dates back even to an entire school of classical Roman and Greek thought, as we will see at the beginning of chapter 4.

[41] Therefore, we must reject Saint Thomas Aquinas's concept of the law, which he defines as "rationis ordinatio ad bonum commune, ab eo qui curam communitatis habet promulgata" (*Summa Theologiae*, pt. 1-2, ques. 90, art. 4, vol. 6 [1955], 42) and thus erroneously considers it a deliberate product of human reasoning. In this sense, Saint Thomas Aquinas is a forerunner of the "false rationalism" Hayek criticizes, as Saint Thomas supposes that through human reason, man can know much more than he is capable of knowing. This spurious and ascientific rationalism would culminate in the French Revolution, the triumph of utilitarianism, and, in the field of law, Kelsenian positivism and the views of Thiebaut. See F. A. Hayek, "Kinds of Rationalism," in *Studies in Philosophy, Politics and*

play at any point in history. Institutions and the social order which gives rise to them become progressively more *abstract* in the sense that it is impossible to discern or identify the infinite variety of particular knowledge and individual ends possessed or pursued by the human beings who act within the scope of an institution. Institutions are highly powerful signs, since they all consist of behavioral rules or customs and thus guide people's actions.

Of all of these institutions, perhaps the most abstract, and therefore the most difficult to understand, is that of *money*. Indeed, money, or a generally accepted medium of exchange, is one of the institutions most vital to the existence and development of our civilization. However, few people come to even intuit the way in which money permits an exponential increase in the possibilities of social interaction and entrepreneurial creativity, and the role money plays by facilitating and making possible the extremely complex and increasingly difficult economic calculations a modern society demands.[4243]

In our elementary model of the exercise of entrepreneurship, we have taken for granted that money exists and that therefore "A," "B," and "C" are willing to carry out certain

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Economics, chap. 5, 82-96. More recently, Hayek has criticized the fact that Aristotle, though he did not go to the socialist extremes Plato did, was never able to fully understand the existence of spontaneous social orders nor the essential idea of evolution (*The Fatal Conceit: The Errors of Socialism*, 45-47), and hence he sparked the emergence of a naively scientistic trend which has encumbered or rendered useless much of the social science developed up to our time.

[42] In fact, in his theory on the origin of money, Menger refers to money as one of the most important and paradigmatic illustrations of his theory on the emergence, development, and spontaneous evolution of social institutions. See pages 152 and following of the English edition of *Untersuchungen*, cited in footnote 39.

[43] Another institution of economic interest and an example of economic organization is the entity unfortunately referred to in Spanish as an *empresa*, when, following the Anglo-Saxon example, it should be called simply a *firma* [firm], in order to avoid confusion between the concept of human action or entrepreneurship and the concept of a firm, which is just another institution, of relative importance, and which emerges in the market because actors find that a certain amount of organization often helps to promote their interests. We believe there exists an entire school of economic thought which tends to exaggerate the importance of firms or business enterprises as an object of research in economics. The firm is merely one of many institutions which arise from human interaction, and one can only understand its emergence and evolution from the standpoint of the theory of entrepreneurship put forward here. The theorists of the firm or business enterprise not only disguise, confuse, and overlook the subjective nature of entrepreneurship, but they also tend to objectify the field of economic research and inappropriately limit it to the firm. See, for example, R. H. Coase, "The Nature of the Firm," *Economica* no. 4 (November 1937). This article was reprinted in chapter 2 of *The Firm, the Market and the Law* (Chicago: University of Chicago Press, 1988), 33-35. See also A. A. Alchian, "Corporate Management and Property Rights," in *Economic Policy and the Regulations of Corporate Securities* (Washington, D. C.: American Enterprise Institute, 1969), 342 and following. A detailed critique of this school of thought appears in Israel M. Kirzner, *Competition and Entrepreneurship*, 52 and following. See also chapter 4, footnote 50.

exchanges in return for a quantity of monetary units. Money is very important, because, as Mises has demonstrated, it constitutes a common denominator that makes *economic calculation* possible in connection with all of those goods and services which are objects of trade or exchange among people. Therefore, let us take the term "economic calculation" to mean *any rough calculation, in monetary units, of the results of different courses of action*. Such an economic calculation is made by each actor whenever he exercises entrepreneurship and is made possible only by the existence of money and by the practical information which the exercise of entrepreneurship constantly generates and transmits.[44]

The Ubiquity of Entrepreneurship

All men, when they act, exercise entrepreneurship. They do so to a greater or lesser extent, and with varying degrees of success. In other words, entrepreneurship, in its purest state, it *ubiquitous*. Thus, for example, a *worker* exercises it when he is on the lookout and decides whether or not to change jobs, to accept one offer, to reject another one, etc. If he makes wise choices, he will find a more attractive job than he would have under other circumstances. If he chooses poorly, his work conditions may be less favorable than they would be otherwise. In the first case, he will obtain entrepreneurial profits; in the second, he will incur losses. A *capitalist* also exercises entrepreneurship constantly. He exercises it when, for

[44] According to Ludwig von Mises, "Economic calculation is either an estimate of the expected outcome of future action or the establishment of the outcome of past action." *Human Action: A Treatise on Economics*, 210, 198-231. Murray N. Rothbard does not seem to understand that economic calculation always poses a problem of the creation and transmission of dispersed, exclusive information without which such an estimate cannot be made. The observations about the economic calculation controversy which appear in his recent work, *Ludwig von Mises: Scholar, Creator and Hero* ([Auburn, Alabama: Ludwig von Mises Institute, 1988], chap. 5, 35-46), make this clear. Rothbard's position seems to derive from an almost obsessive desire to emphasize Mises and Hayek's differences more than their similarities. Though it is true, as Rothbard points out, that Hayek's view has at times been interpreted too strictly, as if he merely referred to a problem arising from the dispersed nature of *existing* knowledge, and as if uncertainty and the future generation of knowledge, issues Mises particularly stressed, posed no difficulty, we believe both viewpoints can be easily combined, since they are closely related. In the next chapter, we will join these two points of view and present them as, respectively, the *static* argument and the *dynamic* argument against the possibility of socialist economic calculation. See especially Murray N. Rothbard, "The End of Socialism and the Calculation Debate Revisited," *The Review of Austrian Economics* 5, no. 2 (1991): 66. See also Joseph T. Salerno, "Ludwig von Mises as Social Rationalist," *Review of Austrian Economics* 4 (1990): 36-48; and "Why Socialist Economy is Impossible: A Postscript to Mises," in *Economic Calculation in the Socialist Commonwealth* (Auburn, Alabama: Ludwig von Mises Institute, 1990). See also the end of footnote 16, chapter 4.

example, he decides to hire one manager instead of another, or he studies the possibility of selling one of his companies, or entering into a certain sector, or including in his portfolio a particular combination of fixed-income and variable-yield securities, etc. Finally, a *consumer* also acts in an entrepreneurial manner continually. He does so when he tries to decide which consumer good he likes best, when he is on the watch for new products in the market, or, on the contrary, when he decides to stop wasting time in the search for new opportunities, etc. Thus, each day in real life, in all specific actions and enterprises, entrepreneurship is constantly exercised to one degree or another, and with more or less success. All who act in the market exercise entrepreneurship, regardless of the capacity in which they act, and consequently, in practice, pure entrepreneurial profits and losses almost invariably appear mixed with income from other economic categories (wages, unearned income, etc.). Detailed historical research alone will permit us to identify, in each case, where such profits and losses occur, and who has exercised entrepreneurship most significantly in the context of each specific action or enterprise.

The Essential Principle

From a theoretical standpoint, what is truly important is not who specifically exercises entrepreneurship (though in practice this is precisely the most important question), but a situation in which there are no institutional or legal restrictions on the free exercise of entrepreneurship, and hence each person is free to use his entrepreneurial abilities as well as possible to create new information and to take advantage of the exclusive, practical information he has discovered in any particular instance.

It does not fall to the economist, but rather to the psychologist, to study in greater depth the origin of the innate strength which motivates man to act in an entrepreneurial manner in all areas. At this point, we will merely underline the following essential principle: *man tends to discover the information which interests him, and hence, if he is free to accomplish his ends and*

promote his interests, both will act as an incentive[45] *to motivate him in the exercise of entrepreneurship and will permit him to constantly perceive and discover the practical information which is important for the achievement of his objectives*. The opposite is also true. If, for whatever reason, the scope for the exercise of entrepreneurship is limited or closed in a certain area of life in society (via coercive legal or institutional restrictions), then humans will not even consider the possibility of accomplishing ends in that *prohibited or limited area*, and therefore, *since the ends will not be achievable, they will not act as an incentive, and the actor will not perceive nor discover any practical information relevant to the achievement of them*. Furthermore, under such circumstances, not even the people affected *will be aware* of the tremendous value and large number of goals which cease to be realizable as a result of these institutional restrictions.[46] In the stick-figure model presented in Figures II-1 and II-2, we see that if people are at liberty to exercise human action, the "entrepreneurial light bulb" can light up freely in any case of social maladjustment or discoordination and thus trigger the process of the creation and transmission of information, a process which will lead to the coordination of the maladjustment; such coordination is what makes life in society possible. However, if the exercise of entrepreneurship is prevented in a certain area, then it becomes impossible for the "entrepreneurial light bulb" to light up in any case. In other words, the entrepreneur cannot

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[45] According to *Merriam-Webster's Collegiate Dictionary* (11th ed.), an *incentive* is "something that incites or has a tendency to incite to determination or action," a definition which coincides with the one we have given for *profit* or *gain*. The subjective profit or gain an actor attempts to acquire with a human action is precisely the incentive or stimulus that motivates him to act. In principle, and granting that this is not the appropriate place to explain in greater depth the psychic essence of entrepreneurship, the more clearly an actor visualizes his objective, and the greater the psychic intensity with which he pursues it, the stronger will be the influx of creative ideas relevant to achieving the objective, and the more easily the actor will distinguish and reject the mire of irrelevant information which could distract him. See also, in chapter 7, the section entitled, "Henry Douglas Dickinson's Book, *The Economics of Socialism*." In this section, we explain two different meanings of the term "incentive," a static and a dynamic meaning.

[46] For many, many years, students in the countries of Eastern Europe, especially in the former Soviet Union, spent thousands upon thousands of hours copying their notes by hand from library reference books, without being aware that photocopiers could have lightened or completely eliminated this work. Only when they *discovered* the widespread use of these machines in the West and their direct application to the field of study and research, among others, did they begin to feel the need for photocopiers and to demand their availability. Such cases are more obvious in comparatively more controlled societies than in those of western countries. Nevertheless, we must not become self-satisfied nor commit the error of considering western societies free of similar cases, since the lack of other, systematically less restrictive societies to serve us as a comparative model keeps us from being aware of how much is lost in the West as a result of interventionism.

possibly discover the existing maladjustment which may therefore continue unchanged indefinitely or even worsen. From this perspective, it is easy to grasp the great wisdom behind the old Spanish proverb, "*ojos que no ven, corazón que no siente*" ["out of sight, out of mind"], which applies directly to the situation we are considering. We see this paradox: man is incapable of feeling or perceiving what he loses when he is unable to freely act or exercise his entrepreneurship.[47]

Finally, let us remember that each man-actor possesses some *bits* of practical information which, as we have seen, he tends to discover and use to accomplish an end. Despite its social implications, only the actor has this information; that is, only he possesses and interprets it consciously. It is clear we are not referring to the information published in specialized magazines, books, newspapers, computers, etc. The only information or knowledge relevant to society is that which someone is aware of, though in most cases only tacitly, at each point in history. Therefore, each time man acts and exercises entrepreneurship, he does so in a characteristic, *personal, and unrepeatable* manner all his own, a manner which arises from his attempt to gain certain objectives or arrive at a particular vision of the world, all of which act as incentives and which, in their particular form and circumstances, only he possesses. *The above enables each human being to obtain certain knowledge or information which he discovers only depending on his ends and circumstances and which no other person can possess in an identical form*.[48]

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[47] The first to enunciate the fundamental principle analyzed in this section was Samuel Bailey, when he stated that every action requires "minute knowledge of a thousand particulars *which will be learnt by nobody but him who has an interest in knowing them*." *A Defense of Joint-Stock Banks and Country Issues* (London: James Ridgeway, 1840), 3. See also, in chapter 3, the section entitled, "Socialism as the 'Opium of the People.'"

[48] León Felipe, in one of his most inspired moments, said:

"Nadie fue ayer	"No one traveled yesterday
ni va hoy	Nor travels today
ni irá mañana	Nor will travel tomorrow
hacia Dios	Toward God
por este mismo camino que yo voy.	By this same path I'm travelling.
Para cada hombre	For each man
guarda un rayo nuevo de luz el sol	The sun saves a new ray of light
y un camino virgen Dios."	And God a virgin path."

Thus the vital importance of not disregarding anyone's entrepreneurship. Even the humblest people, those of the least social status, and the most lacking in formal knowledge, will exclusively possess at least small bits or pieces of knowledge or information which could be of decisive value in the course of historical events.[49] From this standpoint, it is obvious that our concept of entrepreneurship is of an essentially humanistic nature, a concept which makes economics the quintessential humanistic science.

Competition and Entrepreneurship

By its very nature and definition, entrepreneurship is always *competitive*.[50] This means that once an actor discovers a certain profit opportunity and acts to take advantage of it, the opportunity disappears and no one else can perceive and seize it. Likewise, if an actor only partially discovers an opportunity for profit, or, having discovered it completely, takes only partial advantage of it, then a portion of that opportunity will remain latent for another actor to discover and grasp. Therefore, the social process is markedly competitive, in the sense that different actors *compete* with each other, either consciously or unconsciously, to be the first to perceive and embrace profit opportunities.[51] In our model, illustrated by the stickman diagrams, we should consider entrepreneurship to be represented not by one single "light bulb," as we have depicted it for simplicity, but by the simultaneous and successive appearance of *multiple* "light bulbs," each one symbolizing the many, varied entrepreneurial acts of diagnosis and of experimentation with the newest and most diverse solutions to problems of social

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León Felipe, prologue to *Obras Completas* (Buenos Aires: Losada, 1963), 25.

[49] "Each living person, even the most humble, creates merely by being alive." Gregorio Marañón, *El Greco y Toledo: Obras Completas* (Madrid: Espasa Calpe, 1971), 7:421.

[50] The term *competition* derives etymologically from the Latin word *cumpetitio* (the concurrence of multiple requests for the same thing, which must be allotted to an owner), which comprises two parts: *cum*, with; and *petere*, to request, attack, *seek*. *Merriam-Webster's Collegiate Dictionary* (11th ed.) defines *competition* as "a contest between rivals." Thus, competition consists of a dynamic process of rivalry, and not the so-called "model of perfect competition," in which multiple offerers produce the same thing and all sell it at the same price; that is, a situation in which, paradoxically, no one competes. See our article, "La crisis del Paradigma Walrasiano," *El País*, 17 December 1990, 36.

[51] See Israel M. Kirzner, *Competition and Entrepreneurship*, 12-13, and *Discovery and the Capitalist Process*, 130-131. Kirzner emphasizes that all that is necessary to guarantee the

discoordination, solutions which are matched against each other and of which not all can succeed and predominate.

Every entrepreneurial act uncovers, coordinates, and eliminates social maladjustments, and the fundamentally competitive nature of entrepreneurship makes it impossible for any actor to perceive and eliminate those maladjustments anew once they have been discovered and coordinated. One might mistakenly think that the social process driven by entrepreneurship could lose momentum and come to a stop or disappear, once the force of entrepreneurship had revealed and exhausted all of the existing possibilities of social adjustment. *However, the entrepreneurial process of social coordination never stops nor is exhausted*. This is because the essential coordinating act, which we have explained in Figures II-1 and II-2, amounts to the creation and transmission of new information which necessarily modifies among all of the actors involved the general perception of ends and means. This shift in turn gives rise to the appearance of a limitless number of new maladjustments which represent new opportunities for entrepreneurial profit, and this dynamic process spreads, never comes to a halt, and results in the constant advancement of civilization. In other words, entrepreneurship not only *makes* life in society *possible* by coordinating the maladjusted behavior of its members, but it also permits the *development* of civilization by continually leading to the creation of new objectives and knowledge which spread in consecutive waves throughout all of society. Furthermore, it performs the very important function of *enabling this development to be as adjusted and harmonious as humanly possible under each set of historical circumstances*, because the maladjustments which are constantly created as civilization evolves and new information emerges tend in turn to be discovered and eliminated by the very entrepreneurial force of human action.[52] That is, entrepreneurship is the force which unites society and permits its harmonious

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competitiveness of the social process is freedom of entry; that is, the absence in all social areas of legal or institutional restrictions on the free exercise of entrepreneurship.

[52] Therefore, the entrepreneurial process gives rise to a sort of continuous social "Big Bang" which permits the *boundless* growth of knowledge. According to Frank J. Tipler, Professor of Mathematics and Physics at Tulane University, the limit to the expansion of knowledge on earth is 10^{64} bits (and thus it would be possible to multiply by 100 billion the physical limits to growth which have been considered up to now), and it can be mathematically demonstrated that a human civilization based in space could expand its knowledge, wealth, and population *without limit*. Tipler concludes: "Much

advancement, since it tends to coordinate the inevitable and necessary maladjustments which this process of advancement brings forth.[53]

The Division of Knowledge and the "Extensive" Order of Social Cooperation

Given the limited capacity of the human mind for assimilating information, and the growing volume of new information which is constantly created through the social process entrepreneurship drives, it is clear that the development of society requires that the *division of knowledge* continuously spread and deepen. This idea, which in its original formulation was awkward and objectivist and known as the *division of labor*,[54] simply means that the process of development implies, from a vertical standpoint, knowledge which is increasingly deep, specialized, and detailed, and which, *to spread horizontally, demands a constantly increasing human population*. Population growth both follows from and is a necessary condition for the advancement of civilization, given that the capacity of the human mind is quite limited and is

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nonsense has been written on the physical limits to economic growth by physicists who are ignorant of economics. A correct analysis of the physical limits to growth is possible only *if one appreciates Hayek's insight that what the economic system produces is not material things, but immaterial knowledge*." See Frank J. Tipler, "A Liberal Utopia," in "A Special Symposium on *The Fatal Conceit* by F. A. Hayek," *Humane Studies Review* 6, no. 2 (winter 1988-1989): 4-5. See also the remarkable book by John D. Barrow and Frank J. Tipler, *The Anthropic Cosmological Principle* (Oxford: Oxford University Press, 1986), esp. 658-677.

[53] In Figure II-3, we encounter a basic situation like that described in the text. Indeed, "A" can undertake his action because the entrepreneurship "C" exercises informs "A" that a sufficient quantity of resource R is available. Subsequently, in view of the action "A" performs, it occurs to a fourth subject, "D," that he could in turn pursue objective "Z" if he had resource "S," which he does not know where to find, but which is available to agent "E" elsewhere in the market. Therefore, as a result of the information generated in the first entrepreneurial act, a new maladjustment between "D" and "E" emerges and creates a new profit opportunity which awaits discovery and use by someone. And so the process continues.

[54] [Stick figures]

Figure II-3

On the "law of the division of labor" and Ricardo's more general "law of association," see the pertinent remarks Mises makes in his *Human Action*, 157-165. See also Ludwig von Mises, *Nationalökonomie: Theorie des Handelns und Wirtschaftens*, The International Carl Menger Library, 2nd ed. (Munich: Philosophia Verlag, 1980), 126-133. (Here Mises uses the expression "Vergesellschaftungsgesetz" to refer to the "law of association.") As Robbins aptly states (*Politics and Economics* [London: Macmillan, 1963], 141), it is to Mises's credit that he recognized Ricardo's "law of comparative costs" as merely a particular case within a much broader law, the "law of association," which explains how cooperation between the most highly skilled and the least skilled benefits both, whenever each person makes the entrepreneurial discovery that he profits by specializing in that activity at which he has a greater *relative* comparative advantage. Nevertheless, not even here does Mises manage to weed out all of the objectivist remains which from the time of Adam Smith have pervaded the theory of the law of the division of labor. Not until page 709 of his *Human Action* does he expressly mention the

incapable of reproducing the enormous volume of practical information which would be necessary if people constantly created new information through the entrepreneurial process without a parallel increase in the number of people and human minds. Figure II-4 illustrates the process through which the division of practical and dispersed knowledge deepens and spreads, a process which, driven by entrepreneurship, constitutes the advancement of society.[55]

[Stick figures. Text to the left of downward arrow reads: "The passage of praxeological time."]

Figure II-4

The numbers in Figure II-4 serve to identify the different human beings. The letters represent the practical knowledge each human being applies to specific ends. The "lit bulbs" above the arrows in the center of the figure denote the entrepreneurial act of discovering the advantages of trade and of the *horizontal* division of knowledge: indeed, in the second line we observe that each person no longer reproduces the knowledge ABCD possessed by every other person, but instead 2 *specializes* in AB, and 3 and 4 in CD, and they all trade with each other the product of their entrepreneurial action. The light bulbs at the sides represent the entrepreneurial creation of new information which triggers an increase in the *vertical* division of knowledge. In fact, new ideas arise because each actor no longer needs to reproduce all of the dispersed knowledge held by the other actors. Moreover, the increasing depth and complexity of knowledge requires a rise in the population; that is, the appearance of new people (numbers 5, 6, 7, and 8) who in turn can create new information and learn that communicated to them by their "parents," information they spread to all of society through trade. *In short, it is impossible to possess increasing knowledge in a greater number of specific areas if the number of human*

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intellectual division of labor, which in the text we have termed the "division of knowledge" or of information.

[55] Let us keep in mind that it is nearly impossible for us to graphically illustrate even the salient characteristics of the social process driven by entrepreneurship, a process Hayek believes may be the most complex structure in the universe. ("The extended order is probably the most complex structure in the universe." *The Fatal Conceit*, 127.) This "extensive order of social cooperation," which we have been describing in this chapter, is at the same time the quintessence of a *spontaneous*, evolutionary, abstract, and unplanned order. Hayek refers to it as *Cosmos* and contrasts it with a deliberate, constructivist, or organized order (*taxis*). See F. A. Hayek, *Law, Legislation and Liberty*, vol. 1, chap. 2 (Chicago: The University of Chicago Press, 1973), 35-55.

beings does not increase. In other words, the main limit to the advancement of civilization is a stagnant population, since it holds back the process by which the practical knowledge necessary for economic development becomes deeper and more specialized.[56]

Creativity versus Maximization

Entrepreneurship, or human action, does not fundamentally consist of the optimal allocation of given means to ends which are also given. Instead, as we have already seen, it basically involves perceiving, determining, and recognizing the ends and means; that is, actively and creatively seeking and discovering new ends and means. Hence, we should be particularly critical of the awkward and narrow conception of economics which originated with Robbins and his well-known definition of the discipline as a science that studies the use of scarce means which could be put to alternate uses to satisfy human needs.[57] This view presupposes given knowledge of the ends and means, and thus it reduces the economic problem to a *technical* problem of simple allocation, maximization, or optimization. From the Robbinsian perspective, man is an automaton or a human caricature limited to passively *reacting* to events. In contrast to this view, let us consider that of Mises, according to whom man, even more than *homo sapiens*, is *homo agens* or *homo empresario*, since he acts. Rather than merely allocate given means to given ends, what man really does is to constantly seek out new ends and means, while learning from the past and using his imagination to discover and

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[56] "We have become civilised by the increase of our numbers just as civilisation made that increase possible: we can be few and savage, or many and civilised. If reduced to its population of ten thousand years ago, mankind could not preserve civilisation. Indeed, even if knowledge already gained were preserved in libraries, men could make little use of it without numbers sufficient to fill the jobs demanded for extensive specialisation and division of labor. All knowledge available in books would not save ten thousand people spared somewhere after an atomic holocaust from having to return to a life of hunters and gatherers." F. A. Hayek, *The Fatal Conceit*, 133. Therefore, the process, which we have described as a marvelous and surprising social *big bang*, is based on an extremely important feedback phenomenon: it makes a growing population sustainable, the members of which, in turn, feed and provide even more vigorous impetus for the future development and spread of the social *big bang*, and so the process continues. Thus, after thousands of years, we have finally been able to explain in rational and scientific terms this biblical commandment in *Genesis* (1:28 New International Version): "Be fruitful and increase in number; fill the earth and subdue it."

[57] Lionel Robbins, *An Essay on the Nature and Significance of Economic Science* (London: Macmillan, 1972), 16. Robbins, in his acknowledgement of Mises in the prologue to this book, reveals his poor and confused assimilation of Mises's teachings.

create the future step by step.[58] In fact, as Kirzner has convincingly shown, even actions which appear to be solely maximizing or optimizing invariably possess an entrepreneurial component, since the actor involved must first realize that such a course of action, one so automatic, mechanical, and reactive, is the most advantageous.[59] In other words, the Robbinsian conception is simply a particular and relatively unimportant case within the Misesian model, which is much richer and more general and explains social reality much more satisfactorily.

Conclusion: Our Concept of Society

We will conclude by defining society[60] as a *process* (i.e. a dynamic structure) which is: *spontaneous* and thus not consciously designed by anyone; *highly complex*, since it comprises billions of people with an infinite range of goals, tastes, valuations, and practical knowledge; and *composed of human interactions* (which basically consist of exchange dealings that often yield monetary *prices* and are always carried out according to certain rules, habits, or standards of conduct). All such human interactions are motivated by the *force of entrepreneurship*, which continually *creates, discovers,* and *transmits* information, as it *adjusts* and *coordinates* the contradictory plans of the different individuals through *competition* and enables them to *coexist* in an increasingly rich and complex environment.[61]

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[58] As a result, Mises sees economics as part of a much broader and more general science, a general theory of human action or entrepreneurship he calls *praxeology*. See part one of *Human Action*, 11-200. For his part, Hayek states that if for the new science which emerges as we broaden our view of economics "a name is needed the term 'praxeological' sciences...now clearly defined and extensively used by L.v. Mises would appear to be most appropriate." *The Counter-Revolution of Science* (New York: Free Press of Glencoe, 1952), 209.

[59] Israel M. Kirzner, *Discovery, Capitalism and Distributive Justice*, 36 and following. Kirzner also thoroughly criticizes failed attempts to confine the concept of entrepreneurship to the methodological framework of equilibrium and the neoclassical paradigm.

[60] We hold that in a broad sense, the concepts of "society" and "market" coincide, and thus the above definition of "society" fully applies to the market. Moreover, the *Diccionario* of the *Real Academia* defines "market" as "a gathering of people" ["*concurrencia de gente*"], and hence it appears that the Royal Academy shares our point of view and considers the terms "society" and "market" to be synonymous.

[61] Economic science should center precisely on the study of this social process as described above. Hayek feels that the essential purpose of economics is to analyze how the spontaneous social order enables us to take advantage of an enormous volume of practical information which is not available anywhere in a consolidated form, but rather is dispersed throughout the minds of millions of individuals. He maintains that the object of economics is to study this dynamic process by which information is discovered and transmitted, a process which entrepreneurship perpetually drives and which tends to adjust and coordinate individual plans, and thereby makes life in society possible. This and this alone

3. ENTREPRENEURSHIP AND THE CONCEPT OF SOCIALISM

Our definition of socialism rests on the concept of entrepreneurship, as we shall see, and consequently, it was important that we carry out a relatively detailed and in-depth analysis of entrepreneurship, as we have done here. Indeed, throughout this book we will define "socialism" as *any institutional restriction or aggression on the free exercise of human action or entrepreneurship*. We will devote the following chapter to a thorough analysis of this definition and all of its implications. For now we will simply point out that the institutional restriction or aggression often springs from a *deliberate* desire to improve the process of social coordination and achieve certain ends or objectives. In some cases, socialism's institutional attack on human action may have its origins in tradition or history, as in certain precapitalist societies anchored in, for example, the caste system. However, socialism as a modern phenomenon, regardless of its specific type, arises as a deliberate attempt to achieve the following goals through the use of institutional coercion: the "improvement" of society, an increase in the efficiency of its development and functioning, and the accomplishment of particular ends considered "just." Hence, we can complete in the following manner the definition of socialism offered above: Socialism is *any system of institutional restriction or aggression on the free exercise of human action or entrepreneurship which ordinary people, politicians, and scientists usually justify as one capable of improving the functioning of society and of achieving certain ends and objectives considered good*. An in-depth study of socialism as we have just defined it requires a *theoretical analysis* of the concept and its implications, an analysis which permits us to clarify whether or not an intellectual error is involved in the belief that it is possible to improve the system of social coordination via the institutional coercion socialism always entails. Also called for is an *empirical or historical interpretative study* of the different instances of socialism identifiable in the real world, an interpretation to complete and

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constitutes the fundamental economic problem, and thus Hayek is especially critical of the study of equilibrium. He deems such a focus devoid of scientific interest, since it is premised on the assumption that all information *is given* and that therefore the fundamental economic problem has already been resolved. See Hayek, "Economics and Knowledge" and "The Use of Knowledge in Society," in *Individualism and Economic Order*, 51 and 91.

enrich the conclusions drawn from the theoretical examination. Finally, it will be necessary to embark on an analysis in the field of the *theory of social ethics*, with the purpose of clarifying whether or not it is ethically admissible to attack the most intimate and essential characteristic of man: his ability to act creatively. As we indicated in the introduction, we will devote the subsequent chapters of this book to addressing *in extenso* the first of these questions, and we will leave the necessary historical and ethical analyses for future research.