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Chapter 6

The Two Uses of Equilibrium in Praxeological Economics

Praxeological economics uses two concepts that correspond in some measure to the concepts of equilibrium used in mainstream economics. The first is an image of an actionless state in which the economic functions are performed again and again in the same way by automatons, or robots. This robot economy functions as a counterfactual especially with regard to defining entrepreneurship and the conditions that define the market economy. It is also a starting point for building images of entrepreneur economies, as we pointed out in Chapter Two. In this chapter, we expand on that discussion. The second equilibrium-like concept is an image of fully synchronized entrepreneurial plans (IFSP). We shall argue that the latter concept has two related uses: (1) to give examples of entrepreneurship under specific conditions and (2) to help comprehend the means that individuals use to synchronize their actions with others. Giving examples of entrepreneurship is the way that economists build economic theory in order to deal with interventionist arguments about the more specific conditions of the market economy. In giving examples, economists must refer to images in which individuals' actions cause greater synchronization than otherwise. We call such actions the "means of synchronization."

Part one of the chapter discusses the robot equilibrium. Part two describes the use of the image of fully synchronized plans to give examples of entrepreneurship. Part three briefly discusses the use of this image to help comprehend the means of synchronization.

1. EQUILIBRIUM AS AN ACTIONLESS STATE

The first to conceive of equilibrium as an actionless state may have been Clark (1899a: Chapter 2; 1899b). Clark used the term "static equilibrium" to refer to an image of automatons performing the same production, saving, consumption, and capital accumulation behavior again and again yet in the absence of time. Clark maintained that the image is a necessary starting point for building a *science of dynamics* (1899b).[1]

Mises preferred to avoid the mechanical analogy associated with the use of the terms "static," "dynamic," and "equilibrium" (Mises 1966: 366). Nevertheless, he used a construct that is identical to Clark's, labeling it the evenly rotating economy (ERE).[2] He used this construct (1) to elucidate entrepreneurship and the accompanying concepts of profit and loss and (2) to describe the "competitive market process" and its consequences -- the relationship between the prices of consumers' goods and the prices of the factors of production. Referring to our discussion in Chapter Three, we could say that Mises saw how Clark's static equilibrium was precisely the imaginary construction needed to further develop the Austrian theory of value and cost.

It will be argued in the introduction to Chapter Seven that Mises did not complete the project of using praxeological reasoning to support his use of the actionless state of the ERE. Our goal in this part is to do what Mises failed to do -- i.e., to present a more complete praxeological justification for the concept of equilibrium as an actionless state.

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[1]For a discussion of the difference between the Clarkian and classical uses of the static equilibrium concept, see Lionel Robbins (1930).

[2]Mises defined the evenly rotating economy in the following way:

> The evenly rotating economy is a fictitious system in which the market prices of all goods and services coincide with the final prices. There are in its frame no price changes whatever; there is perfect price stability. The same market transactions are repeated again and again. The goods of the higher orders pass in the same quantities through the same stages of processing until ultimately the produced consumers' goods come into the hands of consumers. No changes in market data occur. Today does not differ from yesterday and tomorrow will not differ from today. The system is in perpetual flux, but it remains always at the same spot. It revolves evenly round a fixed center, it rotates evenly (*ibid.*: 247).

Using the Counterfactual to Deal With Complexity

Arguments for and against intervention always relate to particular cases of interaction under market economy conditions. Because the market economy is enormously complex, the task of dealing with such arguments requires the construction of an image of the market economy. Every such construct must deal with the problem of complexity. The term "complexity" has a number of meanings and it can also be used as a rhetorical device to obfuscate. When we use this term here, we are referring to the fact that we aim to build an image of the interaction and therefore of the interdependence of countless individuals engaged in performing the economic actions of consuming, producing, supplying factors, and various other specialized actions that we want to include in order to deal with interventionist arguments. We assume that each actor has an independent mind and that she can choose among the alternative actions and interactions within her purview.

The method we use to deal with this complexity is derived from the method we would have to use if our goal was to build an image of an isolated actor. So let us first discuss how we can best build this image. Our first step is to identify the properties of action by means of the counterfactual. To do this, we contrast a being that lacks the capacity to deliberate over the use of means to achieve ends with one who has this capacity. And we contrast a being who makes behavioral decisions in the absence of uncertainty with one who faces uncertainty and, therefore, has an incentive to deal with it.

We have called this the counterfactual method. By means of the counterfactual, we come to isolate fundamental, or distinctly human, properties of action -- perceiving means and ends, deliberating, making a decision, bearing uncertainty, and identifying and taking other actions to deal with uncertainty. The counterfactual method also helps us recognize a variety of less fundamental characteristics of action. First, it helps us identify specific mental processes through which an actor comes to form an image of his having achieved his ends through time and of the steps he expects to take along the way. Second, it helps us recognize that in deliberating over which plans to make and which actions to take, the actor may exercise imagination, creativity and inventiveness. Third, it helps us understand an actor's efforts to alleviate his uncertainty, to reduce error, and to minimize the effects of these. More specifically, our recognition of the actor's uncertainty prompts us to conceive of various images that the actor might build of the future, how those images change as the actor applies the means to achieve his ends, how he anticipates and

prepares for those changes, and how he may expect to revise and rerevise his plans and actions as he acquires new knowledge through time.

The Robot Economy and Its Uses

Our use of the counterfactual method to deal with the complexity of the market economy begins with the ERE. We build it in such a way that it contains the essential behavior of consumption, saving, the employment of factors, and production. Being an image of robots, it cannot contain appraisement, undertaking, and uncertainty bearing; imagination, creativity, and inventiveness; innovation and copying; error and action aimed at taking advantage of others' errors. Nor does it contain a monetary system or a property system. It is precisely the absence of these that makes the ERE the proper starting point for understanding the market economy.

The main use of the robot economy is as a counterfactual in the most general case in order to help us identify the properties of entrepreneurship. We also use it in less general cases to help us show how imagination, creativity, inventiveness, innovation, copying, errors, and actions aimed at provoking and taking advantage of others' errors are manifest under market economy conditions. To do this properly, we must first build an image of the pure entrepreneur economy. As we pointed out in Chapter Two, the robots of the ERE represents the passive factor suppliers, producers, and consumer-savers.

The ERE also provides a reference for comprehending the a monetary system, the role of time and time preference in market decisions, and a property system. Because the ERE lacks a monetary system but contains prices, it helps us conceive of actions necessary to culminate in a system of interrelated prices. The prices of the ERE imply the existence of money. They also imply a stable money. But to achieve a semblance of the coordination and synchronization described in the ERE, the market economy needs money and a means of keeping it stable. Contrast with the ERE helped Mises show the importance of money as a means of calculation. This, in turn, helped him show the absurdity of the socialist proposal to abolish money and prices.[3] To deal with the consequence of an unstable money, he built the ERE so that it contains capital goods that

[3]Hayek (1945) later used the same kind of image to illustrate the signaling function of money and how this function enabled consumers to gain from the dispersal of market knowledge among the numerous entrepreneurial minds that participate in production and distribution in a market economy.

yield a return. This return functions as a simulated reward for not using resources to produce consumers' goods. In other words, it simulates a return to saving. We call that return the ERE's rate of interest. Mises followed Knut Wicksell in using this notion to help show the effects of an unexpected increase in the quantity of money that is introduced by increasing the amount of lending. Using the Mengerian theory of the orders of goods as a backdrop, he invented the Austrian theory of the trade cycle. In this theory, the increase in lending reduces the anticipated market rate of interest, which distorts the opportunity cost of short and long-term investments. At the time of the increased lending, long-term investments become more attractive, thereby causing a shift of more basic resources away from the shorter-term and toward longer-term investment plans. As the higher quantity of money leads to price increases throughout all the markets in the economy, the distortion is revealed and the temporary nature of the lower market rate of interest. Producers abandon some of the long-term projects. There follows a period of adjustment which, under certain conditions, is accompanied by widespread unemployment of labor. The ERE construction made it easy to present this theory because it transformed the numerous lending markets with numerous rates of interest on loans of different lengths and different perceptions of uncertainty into a single one with a single rate.[4]

The ERE contains a kind of implicit exchange of legal rights to ownership and use. Robot producers can be said to acquire obtain legal rights from factor-suppliers' to use the factors in their production; and they can be said to turn over the rights to use, or consume, goods to the consumers. We can call this kind of obtaining and giving up "exchange of legal rights" under a "complete property system." This way of conceiving the ERE helps us conceptualize an incomplete property system as one in which the legal rights to cause the performance of actions that affect others (1) are not fully defined or enforced, (2) are defined or enforced in such a way that people do not fully account for the effects of their actions on others, or (3) are costly to define or enforce. Like the case of the monetary system, we cannot proceed very far with this idea until we define entrepreneurship and elucidate its manifestations in a market economy. in this book, we provide only the starting point for a further examination of the problems associated with an incomplete property system.

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[4]It should also be said that some writers have not appreciated the

2. EQUILIBRIUM AS AN IMAGE OF FULLY SYNCHRONIZED PLANS

Giving examples of entrepreneurship in economics is the way that we build economic theory. In giving examples, we make very restrictive assumptions about some of the data and/or actions, while allowing other data and/or actions to change. We choose our assumptions on the basis of the particular interventionist argument (s) we want to evaluate. Often we must give a series of examples for which we proceed step by step from the more general to the more particular.

To give an example, we conceive of a beginning point in which there is no motivation for entrepreneurial action; we introduce a motivation to act that we propose is relevant; then we try to conceive of and specify a series of choices and behavior that would lead to an ending point at which there is no longer a motivation to act. Finally we go on to contrast the assumed choices and behavior with the imaginative, creative, and inventive action of which we know distinctively human actors to be capable. Both the beginning point and ending point are images of interactors' fully synchronized plans to perform various behavior. In these two images we assume that each individual performs behavior in accord with her plans such that it enables the plans of the others to be realized. We assume the behavior in both images to be the result of the combined choices of many separate individuals. We briefly described this procedure in Chapter Two.

It is not evident at first that the method of giving examples is the only method available for building economic theory. To best way to understand this method and its rationale is to first show how we can use it to develop a theory of the action of an isolated actor. By this means, we can demonstrate the method's use without being burdened by the complexity of specialization and interdependence. As we will see below, the application of the method to the market economy requires additional tools. However, the basic idea of producing theory by giving examples is present in both exercises.

Giving an Example of a Particular Action of an Isolated Actor

Let us take the simplest case of giving an example of a particular action of a single isolated individual. Imagine that as a student of praxeology, you have just returned from a study trip. The goal of your trip was to

study the actions of a long-time hermit. You observed her for several weeks, taking notes on her behavior. You were careful to conceal your study and you are certain that she did not know that you were observing her. Your task now is to report your observations to your colleagues. How would you proceed? You might begin by pointing out that the hermit is a human being and an actor. Unless you had already agreed on a meaning of this, you would also describe what you believe are the defining characteristics of this type of being. To help your colleagues understand her action, you would first tell your colleagues that she is an actor, just like you and they are. Then you would give examples of her behavior and hypothesize about her mental state before and during the action.

At any point in time, even a hermit is performing many different actions simultaneously. In giving an example, you would not describe all of the behavior that you observed. Instead, you would try to isolate a particular action from among the complex of actions that you hypothesize she is performing. The complexity of action would compel you to proceed step by step. There are two possible starting points. The first is to provisionally disregard all of the hermit's action that you might believe is occurring if you wanted to conceive of her action fully. You concentrate on a single, particular action. At first you assume that she has no motivation to perform the action, then you introduce a motivation to perform it in the form of a change in the data. Then you describe the sequence of behavior she would build an image of a beginning point in which the hermit's behavior is perfectly consistent with her current plans. Next, you would introduce some change in the data that motivates her to change her behavior. In addition, you would specify how this change will lead her to choose behavior that is different from that of the beginning point. You would use your assumption about the change in the data and behavior to build a second image -- that of the ending point. An ending point is reached after she develops a new plan in light of the newly introduced change and proceeds to behave in accord with the plan. Once the new plan is devised and undertaken -- i.e., in the image of the ending point -- there is again no incentive for her to further change her behavior. Like the beginning point, the ending point is also an image of behavior that is fully consistent with her plan or plans. Finally, to be complete, you would contrast the image of choices and behavior that *you* specify in the images with imaginative, creative, and inventive distinctly human action that you and your colleagues know actors to be capable of under the circumstances assumed. By this means, you would assure that your images are "open-ended." You would thereby exhibit your recognition that the study of one human being by another is always limited by the

possibility that the reasoning used by the subject may be more complex than and not even understandable to the observer.

Consider the problem of representing an isolated actor's action of picking a berry from a bush. We may begin by making the assumption that the isolated actor has reached a stage where she only carries out behavioral routines in accord with a previously set plan. She no longer makes plans. We may assume that among the wants that she took into account when she stopped her planning made her previous plan was a want for sweet fruit and, within that class, a want for berries. However, her want for berries was not strong enough to lead her to pick the berries. Instead, she decided to use her labor for other activities, including gathering other kinds of fruit. Next we introduce an increase in her want for berries. Putting ourselves in her shoes, we describe her action of revising her plan. Part of her new plan is a sub-plan to pick berries and to spend less time doing something else. We thus have an image of her behavior which includes a set of assumptions about her original perceptions, her changed perceptions, her original choices and her changed choices. We conclude our example by contrasting this image with what we know to be her personal imaginative, inventive, and creative abilities, which may lie beyond our capacity to fully comprehend and articulate. Here we consider the possibility that she may explore for other fruits, that she may improve her picking efficiency, that she may discover new uses for berries, and so on. At this stage we bring to bear knowledge that we judge is relevant to our interest in her. We are not she, so we cannot be certain what choices she would make if she developed a want for berries. Nevertheless, we must make judgments. This is our example.

Fulfilled and Unfulfilled Expectations

When we describe an endpoint, we must assume either that the expectations associated with the plan are fulfilled as expected or that they are unfulfilled and that the action does not end as the actor expected. The endpoints we describe below assume that the plan is fulfilled as expected. The aim in making this assumption is to achieve closure. An endpoint in which expectations are unfulfilled would be useful if we wanted to illustrate the uncertainty of action and the ongoing adaptability and creativity of the human mind. Another use of such an image is to help us demonstrate the incompleteness of our images of the beginning and ending points, since an image in which some expectations go unfulfilled is the antithesis of a complete image.

Giving an Example of a Particular Case of Economic Interaction

When we try to apply an analogous method to the case of many actors, the problem of complexity threatens to overwhelm us. The simplest comprehensive image of a market economy is an image of the PEE. To employ the PEE to build an image of a beginning point and ending point, we must make a contradictory assumption about the pure entrepreneurs. We must assume that they only carry out the behavior routines that are consistent with the respective plans we assume they have. It will be recalled that in the PEE, only some of the individuals are actors -- the pure entrepreneurs. The consumer-savers and factor suppliers are robots. The robots do not behave in accord with plans. Their behavior is fully determined by algorithms that we specify. We assume that at the beginning point and at the ending point, the separate robot behaviors are fully synchronized by the assumed plans of the entrepreneurs.

Starting with the beginning point, we introduce a motivation to act in the form of a change in wants, abilities, or knowledge that is perceived by at least one pure entrepreneur. In a PEE, we would identify such a situation as an *opportunity to profit*. In view of the contradictory nature of the notion of an entrepreneur who reaches an endpoint, it is wise to introduce a different term to refer to the income that we assume prompts the behavior that helps to lead to the ultimate endpoint. Let us use the term "synchronization gains." And let us call the personification that perceives and earns these a "synchronizer." Thus, we introduce a motivation to act, which the synchronizer interprets as an opportunity to earn synchronization gains. Following this, the synchronizers' plans and robot behaviors are no longer synchronized. As the synchronizer changes his plans and actions, he causes the opportunities perceived by the other synchronizers to change also. Opportunities for synchronization gains are perceived by many. The actions taken by the synchronizers cause the constraints faced by the robots to change. In light of the changes, the algorithms of the robots cause them to change their behavior. By putting ourselves in the shoes of the synchronizers and by making assumptions about the algorithmic behavior of the robot consumer-savers and factor suppliers, we conceive of plans and behaviors that would be necessary to reach a new fully synchronized ending point. We call that endpoint an IFSP.

To deal with some arguments relating to intervention, this is all that we need to do. However, to deal with others, we must build images of synchronizers based of more complex entrepreneur economies. Many interventionist arguments demand that we include the entrepreneurship of various specialized actors, such as financiers, guarantors, insurers, and various layers and types of specialized intermediaries. Others demand

that we include the entrepreneurship of specialized factor suppliers like hired managers and workers of various types. Still others require us to take account of the entrepreneurship of consumer-savers in the real market economy.

We must recognize, of course, that the synchronizers' plans that we assume to have been fulfilled when we give examples capture only part of entrepreneurship. The synchronization gain incentive that we introduce excludes important characteristics of the profit incentive that are present under real market economy conditions. Some of the most important characteristics of human beings -- imagination, creativity, inventiveness and the ability to build plans and images -- are omitted from our examples. To make our examples realistic and open-ended, we must supplement them with a discussion of these characteristics of human action and of their relevance to the example at hand.

The Robot Economy and the Image of Fully Synchronized Plans

Due to complexity, our images of the beginning and ending points in the PEE employ an image of a robot economy in which all of the essential economic functions are performed. However, this image of fully synchronized plans (IFSP) is very different from a robot economy, as that image is used in the elucidation of the personal properties of entrepreneurship. In the IFSP, (1) each pure entrepreneur-synchronizer has, to his satisfaction, planned out his entire future and (2) each believes that his plans are sufficiently synchronized with the plans of others that he has no reason to change and therefore no motivation to act. There is no implicit assumption that any particular planned behavior will be repeated.

In the IFSP, time is an integral part of each behavioral plan. Each pure entrepreneur makes a definite plan for a definite future. He may plan to perform different behavior at different times. For example, a pure entrepreneur may plan to complete his production of good A at the end of one year, at which time he will begin to produce good B for five years, after which he will retire from the ranks of the pure entrepreneurs. He proceeds to carry out the routine behavior that he expects to lead his plans to be fulfilled. Because we assume that his plans are fully synchronized with others, his expectations are met. In the robot economy, there are no plans. We assume that the robots repeat the same behavior time and again. We simulate time by referring to repetitions of behavior. But the repetitive time of the robot economy is completely different from the time for which the pure entrepreneurs of the PEE plan their future behavior.

The robot economy is the image we use when we apply the counterfactual method to identify the fundamental characteristics of

entrepreneurship, as we did in Chapter Two. However, it is an improper image for giving examples because it contains nothing comparable to the fulfillment of the plans of mortal, distinctly human beings.

The difference between the two is most clear when we consider saving. Saving in a robot economy refers to the behavior of replacing the factors that we assume are depleted during a particular repetition of behavior. There can be no tradeoff between consumption and saving because there is no time. We could represent greater saving by building an image of a robot economy in which fewer factors are depleted but we cannot relate saving in such an image to any kind of plan. In the IFSP associated with a PEE, saving refers to the factors of production that are devoted to any pure entrepreneur plan that will not yield benefits in consumers' goods at the earliest possible time. If an orange takes more time to produce than an apple, then a entrepreneur plan to produce an orange shows that there is saving. An increase in saving refers to a decision to act in some way that is expected to cause consumption benefits to be available at some specific time, or times, that are later than otherwise possible by using the same factors.

The choice to save according to a plan contains an expectation about the goods that the planner will consume throughout her lifetime. She may plan to consume fewer goods of given types in the near future and more in the distant future. She plans some amount of consumption for each relevant time period. But the amounts planned for one period may differ from the amounts planned for another.

Another example of the difference between the two is the treatment of money. A robot economy has a specific set of prices that describe it. But the prices themselves and money have no other function. When a praxeological economist identifies characteristics of the market economy or gives examples, money does have a function. In both the starting and ending images, we assume that actors use money as a calculation tool to help them make plans and as a tool for signalling others of one's intentions. Moreover, people may hold money because they plan to spend it or because of other expectations about the future. In short, there is a demand for money balances. In the simple images presented in this book, money holding is disregarded. However, to apply these images to problems involving credit and changes in the quantity of money, it would be necessary to shift toward more complex models that contain a demand to hold money. A more complete example using a beginning and an ending point would specify the effects on the amount of money held.

An Image of Non-Synchronized Plans

We can only comprehend the IFSP by contrasting it with its antithesis -- an image of non-synchronized plans. The simplest example of the latter is that of the PEE that we described in Chapter Two. In that image, each pure entrepreneur employs specific amounts of some factors to produce specific amounts of goods that he plans to sell at specific prices and under specific conditions. As some of the entrepreneurs begin to carry out their plans, they come to judge that they would have been better off if they had hired more or fewer factors of various kinds, if they had used different methods of production, if they had produced different goods, if they had charged different prices, or if they had set different transaction conditions. They believe that their profits could have been higher or their losses lower. Each of them anticipates profit from making a different future choice. He says to himself that if he faced an identical situation in the future, he will choose differently. Moreover, in the PEE there is a continuing concatenation of new products and methods of production and distribution due to the imagination, creativity and inventiveness of the pure entrepreneurs.

Fulfilled and Unfulfilled Expectations

The IFSP assumes that expectations are fulfilled. In light of the continuing uncertainty that we observe in everyday market economies and that we can deduce by putting ourselves in the shoes of the actors under the conditions of the market economy, there is no reason to think that such a situation would ever emerge in everyday life. The main purpose of the image is to help us give examples of entrepreneurship. We select simple cases that help us illustrate some set of entrepreneurial actions that we believe are relevant to evaluating arguments for or against a particular market intervention.

Achieving Greater Synchronization

The images of synchronization we build can also help us define and describe synchronization in the market economy. The prospect for gains from specialization and trade clearly provide incentives for individuals to synchronize their actions with each other. On the other hand, the prospect for gains from deception, defraud, and positioning oneself parasitically provide incentives of de-synchronization. Another consideration is that individuals may use their imagination, creativity, and inventiveness to help them perform actions that synchronize or that desynchronize.

For various reasons, economists may want to focus on the synchronizing actions. At first glance there appear to be two of these:

positioning and obtaining commitments. Closer examination will show that there is a relationship between some types of positioning actions and amount to informal commitments-making. To illustrate these, we assume for simplicity that the same consumer wants, factor supply, technology and physical environmental conditions exist indefinitely. All that changes are the positions or commitments in the PEE. We discuss each in turn.

Positioning

We use the term "positioning" to refer to the action of independently changing one's transaction bids and acceptances (and subsequent factor purchases, production, and sales) in order to increase the benefits or to reduce the harm due to the prospective transactions of others. It includes making new exchange offers, accepting newly-made exchange offers, copying the successful actions of others, switching factors from one industry to another, and exiting or entering the ranks of the entrepreneurs. We can build the simplest image of positioning by assuming that it is the *only* means of adjustment in the PEE. Beginning with an image in which the plans of pure entrepreneurs are not synchronized, we assume that the entrepreneurs have an incentive to position themselves differently. We assume that the decisions of become more and more accurate in the following sense. The positions chosen (i.e., the offers and acceptances) by all of the pure entrepreneurs, taken together, come closer and closer to reaching a situation in which the entrepreneurs do not wish to change them. We can visualize this by imagining a series of *rounds*. During each round but the last, each pure entrepreneur undertakes production and sales the outcome of which is unexpected profit or loss. But the unexpected profit or loss is lower than it was in the previous round.[5] We might say that during each round the pure entrepreneurs choose positions in order to test hypotheses about whether particular factor and goods transactions will raise profit or reduce loss. The assumed propensity of factor owners and consumers to accept transactions offers does not change in general. However, the actions of other pure entrepreneurs persistently changes the perceived likelihood of offer acceptances *faced by a particular pure entrepreneur*. As a result, the entrepreneur has an incentive to adjust his transaction offers in light of his perceived changes in likely acceptances.

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[5]For some interventionist arguments, it may be expedient to build an image of a situation in which the unexpected profit or loss is higher for some entrepreneurs during some successive rounds than during previous rounds. Ultimately, however, every pure entrepreneur's expect gain from further repositioning must be zero.

Eventually, each entrepreneur "learns" enough to be able to predict exactly what the relevant others will do in response to all of the possible positions he regards and relevant. Ultimately, their retrospective errors are reduced to zero "for all time." In the last round, all expectations are fulfilled. The plans are fully synchronized. Through positioning, trial-and-error leads inexorably toward the IFSP. From the viewpoint of the economic theorist, mutual positioning can be called the *independent action solution* to the problem of synchronization.

Obtaining Commitments

In making a commitment, one pure entrepreneur promises another that she will perform some specified behavior. Assuming that the promise can be trusted, this enables a promisee to make more profitable appraisals and undertakings (1) because it reduces the uncertainty he faces when he makes transaction offers to factor suppliers and consumers or (2) because it enables promisees to reach a more mutually satisfactory division of uncertainty-bearing.[6]

We conceive of the emergence of a situation of fully synchronized plans by assuming that each pure entrepreneur makes promises or commitments to every other relevant pure entrepreneur such that no further exchanges of promises or commitments could be jointly agreed to. In other words, we conceive of a huge set of bilateral (and, if we wish, multilateral) commitments. As in synchronization due to positioning, we assume that the behavior of each pure entrepreneur becomes fully synchronized with the behavior of the others. We can imagine this occurring through a series of bargaining and negotiating rounds.

The entrepreneurship necessary to reach this imaginary synchronization ending point entails the making, buying and selling of commitments. Each pure entrepreneur appraises factors and announces a tentative willingness to trade his commitments for the commitments of other pure entrepreneurs. For example, suppose that a pure entrepreneur wants to reduce his uncertainty about the demand for his product. Then he may make a tentative deal with the producer of a complementary good to sell it at a specific price and to make it available at a specific time. Similarly, to avoid the uncertainty of factor prices, he may seek a commitment from

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[6]This means that in theory there are two basic forms of commitments: (1) a commitment to perform some action at a future time and (2) a commitment to share in the gain or loss (liability) due to an action. Within these basic forms, there are many variations.

other pure entrepreneurs to buy an agreed-upon amount of factors in the future at prices and under conditions that are set today.

The tentative commitments made by some entrepreneurs lead others to revise their initial commitments. This in turn prompts a revision by the original entrepreneurs. As the pure entrepreneurs first revise their respective expectations about each others' willingnesses to buy and sell commitments and second revise their offers and acceptances, they eventually reach a point where each knows that he has entered into the best set of commitments with the relevant others that is possible. When each pure entrepreneur reaches this point, a combination of agreements is made and each entrepreneur plans to carry out the terms of his commitments to others. Plans are fully synchronized. From the viewpoint of the economic theorist, the making of commitments can be called a "contractual solution" to the problem of synchronization.

Remarks

One of the positioning actions is actually a type of commitment. A person who makes a price offer is making a commitment to sell the item he announces under the conditions he describes at or near the price he announces. If this was not ordinarily true, he could not expect anyone to pay attention to his announcement. However, this commitment differs from the others. First it is made independently. The transaction announcer aims to provide information to others. This is the way he aims to position himself. A person who seeks out the commitment of others aims to reduce his uncertainty or to reach a satisfactory division of uncertainty-bearing.

Another point that is worth making is that a commitment need not be a legal right in the sense that the authorities are called upon to enforce it. Commitments that do not involve the authorities are often more effective in synchronizing actions than commitments backed by law.

Imaginary Constructions and Reality

In the procedure for building economic theory, we must make use of imaginary constructions such as the ERE, the PEE, and the IFSP. It might be objected that we could never be certain that the deductions based on our imaginary constructions could be applied to real problems. Against this, we can make two arguments, one positive and one negative.

The positive one is based on the characteristics of the constructions we employ. The constructions that we have described so far are intended to

reflect the most basic properties of distinctly human action under conditions that we must assume in order to evaluate the arguments for or against practically all intervention in the market economy. As a result, we are assured that our constructions are relevant to the goal of economics. We cannot cover all of the possible types of entrepreneurial interaction and divisions of entrepreneurial tasks. If we were to go on to build more specific images based on assumptions about specific conditions that define the context of the market economy or about specific wants, abilities and knowledge of individuals; we could not speak with such confidence about their relevance. In making our choices among which of the more specific images to build, we can rely partly on feedback from peers.

The negative argument is that there is no reasonable alternative. The phenomena are too complex to comprehend in their entirety. The successful analyzer of economic interaction must shift between abstract reasoning and concrete examples from everyday life in such a way that the audience comes to agree that the economic analysis helps to evaluate arguments for and against intervention with which he is concerned. Economic arguments aim to persuade through appeals to logic and to a common sense about relevance. Either we adopt the methods and procedure described in this book or we surrender to emotion, fantasy, or illogic.

Nothing New But Articulation

It is important to realize that the procedure we are discussing here is neither new nor the distinct province of some subset of professional economists who adopt a particular point of view. This procedure is used by all economists who apply sound economic reasoning to identify and describe the characteristics of the market economy in order to evaluate interventionist arguments. The economists may use different terms, their descriptions may be unnecessarily prolix, and they may stumble into error and confusion. Some are more adept than others. Moreover, it seems that no economist has ever fully articulated this procedure. The best economists seem to able to judge intuitively whether a description of the characteristics of the market economy is good or bad. Reflection reveals, however, that the descriptions of economic interaction that they

intuitively judge to be good follow, in substance, the procedure described here.[7]

The Pebble-in-the-Still-Pond Metaphor

The interactive positioning and commitment-making we described above seems analogous to the observable effects of dropping a pebble from a bridge in a still pond. The purpose of the notion of a still-pond equilibrium is to try to isolate a single relational influence. Many things are related to the movement of water in the pond. Objects falling into the pond are one class. If it were not for other factors, such as wind, fish living in the pond, etc., one could trace the singular effects of dropping the pebble into the pond through observation alone. Because of the other factors, a scientist may proceed by building an image of a pebble being dropped into a pond in which none of the other relational influences are present. This would help him conceptualize the independent influence of the pebble. Of course scientists could also conduct experiments by, for example, dropping the same size pebble into different ponds which contain different combinations of other suspected influences. Or, a scientist might create an artificial pond in which she tries to make other influences as small as possible.

Due to the uniqueness of economic events and their complexity, the economist is constrained to use only the first of these procedures -- the cognitive procedure of conceptually isolating one influence from the others. Even in the use of this procedure, the economist's goal differs from that of the natural scientist. The scientist's goal is to grasp all of the causal relationships by investigating one at a time. The economist's is merely to give a comprehensible example of entrepreneurship. He realizes that he cannot put himself in the shoes of the countless specialists of the market economy. He can use the isolating method to isolate the actions of a single individual acting in the entrepreneur role under specific conditions that he specifies. But he is by nature unable to write

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[7]No doubt many modern economists would resist being labeled praxeological. They might, for example, call themselves positivist in the sense that they characterize their enterprise as formulating and testing hypotheses in a way similar to behaviorists and natural scientists. They do not consider that what they regard as hypothesis-testing is, from the praxeological viewpoint, the assembly of facts to help them show the *relevance* of particular theories.

of the countless individuals involved in interaction because he cannot even conceive of all of their separate specializations. Indeed, some of the individuals who wear the shoes into which he would like to put himself if he could, specialize themselves in trying to build images to conceive of the actions of a large number of other specialists.

If pebbles, water molecules, the wind, etc. could deliberate, make decisions, bear uncertainty, make errors, and be creative, inventive, and imaginative; the natural scientist would face the same order of complexity that is faced by the praxeological economist. But, of course, they cannot. We can make a metaphor between (1) the gravity that pulls the pebble into the pond once we drop it and (2) the profit motivation that *pulls* the actions of interacting entrepreneurs in the direction of behaviors that satisfy the condition of consumer sovereignty (given the exceptions we have discussed). We can make an analogy between the gradual disappearance of the ripples and the positioning and commitments that we assume to gradually lead to the IFSP. However, the falling pebble is nothing like the specialized, competing imaginative, creative, and inventive, error-prone, positioning, and commitment-making entrepreneurs. Exactly which behavior they will perform is decided by them in accordance with knowledge that we, as economists, could not hope to fully obtain.

Recapitulation: The Epistemology of Economic Theory

Every distinguishable action has at least one goal. To describe a particular action performed by a single actor, we describe the goal or goals that the actor aims to achieve. Then we specify the means he aims to use to achieve them. The description of a particular action is, at minimum, a description of a motivation to act and the decision to perform a particular set of behavior. It may also include a description of the consequences of that behavior. We can give an example of action that achieves the goal(s) we specify or of action that does not achieve the goal(s). In either case, we must describe the conditions we assume the actor to believe must exist for the goal to be achieved. We can describe an action having been achieved as one for which the *realized* outcome is fully coordinated with the *planned* outcome.

The ability of one normal human being to represent another normal human being's action accurately is limited. First, a person probably cannot even fully represent her our own actions. Second, we know from experience that the actions of others and the thoughts behind them are different from our own in many ways, some of which we cannot discover. Finally, even if we could fully understand another human being, the fact

that he has an independent will means that he could will to act in a way that is different from what we predict.

Our inability to fully represent the action of another human being dictates that we make our images of action "open-ended." We do this by recognizing and appreciating the imagination, creativity, inventiveness, and errors of others' actions. We first describe a single action by building an image of the goal or goals that the actor aims to achieve and the outcome of the behavior he performs in order to achieve that goal. Then we add a qualification that our image does not account for the imagination, creativity and inventiveness that real actors possess and the errors they are likely to make. We can only speculate about these.

With this in mind consider now the problem we face in describing the action and interaction of countless individuals in the market economy. As we have already pointed out, there is no sense in which entrepreneurial interaction can be said to cease, or reach a final state of rest. Yet, to give an example of it -- and, therefore, to build economic theory -- we are compelled at least to conceive of images of goals and the means of achieving them that we assume are in the minds of individuals acting in the role of the entrepreneur. Each individual in the market economy who contemplates action must have in mind an outcome or set of outcomes. And if we are to describe interactive entrepreneurship, we must conceive simultaneously of images of the outcomes that are in the minds of all those who are relevant to our example. The problem is how to build images that are manageable.

The only answer that seems to make sense is (1) to begin with an imaginary state in which there are plans but no action because the plans are fulfilled, (2) to introduce a motivation to act, and (3) to build an image of a set of actions that would lead to an outcome at which the motivation to act would no longer exist.[8] The outcome is an image of fully synchronized plans. In light of our discussion of the problem of describing the action of a single individual, we must add the qualification that real actors possess imagination, inventiveness, and creativity which, in light of specialization, we cannot fathom. Finally, we must recognize the propensity to err as well as deceit, fraud, and passive parasitic positioning that aims to take advantage of errors.

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[8]Mises discussed such a procedure in his theory of pricing (*ibid*.: 334). However, his image of the goal of this procedure was limited to that of presenting the theory of imputation. We have discussed this already and will discuss it again in Chapter Seven.

3. THE MEANS OF SYNCHRONIZATION

We have identified the two means of synchronization: positioning and obtaining commitments. In order to evaluate many interventionist arguments, we must build economic theory by giving examples of entrepreneurship in which we identify particular instances of positioning and commitment-making that are likely to occur under particular conditions. Because the IFSP is a variation, extension or modification of the pure entrepreneur economy, it provides a comprehensive, or bird's eye, view of positioning and commitment-making. Accordingly, it helps us to identify the specific positioning and commitments that occur in a real market economy relative to other possible positioning and commitments. The specific positioning and commitment-making that occur in a real market economy requires a study of facts. In the evaluation of many interventionist arguments, we not only need the comprehensive view but also specific examples of the means of synchronization.

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