

By FRIEDRICH A. HAYEK

Individualism
and
Economic
Order



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IV. The Use of Knowledge in Society*

1

WHAT is the problem we wish to solve when we try to construct a rational economic order? On certain familiar assumptions the answer is simple enough. *If* we possess all the relevant information, *if* we can start out from a given system of preferences, and *if* we command complete knowledge of available means, the problem which remains is purely one of logic. That is, the answer to the question of what is the best use of the available means is implicit in our assumptions. The conditions which the solution of this optimum problem must satisfy have been fully worked out and can be stated best in mathematical form: put at their briefest, they are that the marginal rates of substitution between any two commodities or factors must be the same in all their different uses.

This, however, is emphatically *not* the economic problem which society faces. And the economic calculus which we have developed to solve this logical problem, though an important step toward the solution of the economic problem of society, does not yet provide an answer to it. The reason for this is that the “data” from which the economic calculus starts are never for the whole society “given” to a single mind which could work out the implications and can never be so given.

The peculiar character of the problem of a rational economic order is determined precisely by the fact that the knowledge of the circumstances of which we must make use never exists in concentrated or integrated form but solely as the dispersed bits of incomplete and frequently contradictory knowledge which all the separate individuals possess. The economic problem of society is thus not merely a problem of how to allocate “given” resources—if “given” is taken to mean given

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Individualism and Economic Order

to a single mind which deliberately solves the problem set by these "data." It is rather a problem of how to secure the best use of resources known to any of the members of society, for ends whose relative importance only these individuals know. Or, to put it briefly, it is a problem of the utilization of knowledge which is not given to anyone in its totality.

This character of the fundamental problem has, I am afraid, been obscured rather than illuminated by many of the recent refinements of economic theory, particularly by many of the uses made of mathematics. Though the problem with which I want primarily to deal in this paper is the problem of a rational economic organization, I shall in its course be led again and again to point to its close connections with certain methodological questions. Many of the points I wish to make are indeed conclusions toward which diverse paths of reasoning have unexpectedly converged. But, as I now see these problems, this is no accident. It seems to me that many of the current disputes with regard to both economic theory and economic policy have their common origin in a misconception about the nature of the economic problem of society. This misconception in turn is due to an erroneous transfer to social phenomena of the habits of thought we have developed in dealing with the phenomena of nature.

2

In ordinary language we describe by the word "planning" the complex of interrelated decisions about the allocation of our available resources. All economic activity is in this sense planning; and in any society in which many people collaborate, this planning, whoever does it, will in some measure have to be based on knowledge which, in the first instance, is not given to the planner but to somebody else, which somehow will have to be conveyed to the planner. The various ways in which the knowledge on which people base their plans is communicated to them is the crucial problem for any theory explaining the economic process, and the problem of what is the best way of

The Use of Knowledge in Society

utilizing knowledge initially dispersed among all the people is at least one of the main problems of economic policy—or of designing an efficient economic system.

The answer to this question is closely connected with that other question which arises here, that of *who* is to do the planning. It is about this question that all the dispute about “economic planning” centers. This is not a dispute about whether planning is to be done or not. It is a dispute as to whether planning is to be done centrally, by one authority for the whole economic system, or is to be divided among many individuals. Planning in the specific sense in which the term is used in contemporary controversy necessarily means central planning—direction of the whole economic system according to one unified plan. Competition, on the other hand, means decentralized planning by many separate persons. The halfway house between the two, about which many people talk but which few like when they see it, is the delegation of planning to organized industries, or, in other words, monopolies.

Which of these systems is likely to be more efficient depends mainly on the question under which of them we can expect that fuller use will be made of the existing knowledge. This, in turn, depends on whether we are more likely to succeed in putting at the disposal of a single central authority all the knowledge which ought to be used but which is initially dispersed among many different individuals, or in conveying to the individuals such additional knowledge as they need in order to enable them to dovetail their plans with those of others.

3

It will at once be evident that on this point the position will be different with respect to different kinds of knowledge. The answer to our question will therefore largely turn on the relative importance of the different kinds of knowledge: those more likely to be at the disposal of particular individuals and those which we should with greater confidence expect to find in the possession of an authority made up of

Individualism and Economic Order

suitably chosen experts. If it is today so widely assumed that the latter will be in a better position, this is because one kind of knowledge, namely, scientific knowledge, occupies now so prominent a place in public imagination that we tend to forget that it is not the only kind that is relevant. It may be admitted that, as far as scientific knowledge is concerned, a body of suitably chosen experts may be in the best position to command all the best knowledge available—though this is of course merely shifting the difficulty to the problem of selecting the experts. What I wish to point out is that, even assuming that this problem can be readily solved, it is only a small part of the wider problem.

Today it is almost heresy to suggest that scientific knowledge is not the sum of all knowledge. But a little reflection will show that there is beyond question a body of very important but unorganized knowledge which cannot possibly be called scientific in the sense of knowledge of general rules: the knowledge of the particular circumstances of time and place. It is with respect to this that practically every individual has some advantage over all others because he possesses unique information of which beneficial use might be made, but of which use can be made only if the decisions depending on it are left to him or are made with his active co-operation. We need to remember only how much we have to learn in any occupation after we have completed our theoretical training, how big a part of our working life we spend learning particular jobs, and how valuable an asset in all walks of life is knowledge of people, of local conditions, and of special circumstances. To know of and put to use a machine not fully employed, or somebody's skill which could be better utilized, or to be aware of a surplus stock which can be drawn upon during an interruption of supplies, is socially quite as useful as the knowledge of better alternative techniques. The shipper who earns his living from using otherwise empty or half-filled journeys of tramp-steamers, or the estate agent whose whole knowledge is almost exclusively one of temporary opportunities, or the *arbitrageur* who gains from local differences of commodity prices—are all performing eminently useful functions based on special knowledge of circumstances of the fleeting moment not known to others.

The Use of Knowledge in Society

It is a curious fact that this sort of knowledge should today be generally regarded with a kind of contempt and that anyone who by such knowledge gains an advantage over somebody better equipped with theoretical or technical knowledge is thought to have acted almost disreputably. To gain an advantage from better knowledge of facilities of communication or transport is sometimes regarded as almost dishonest, although it is quite as important that society make use of the best opportunities in this respect as in using the latest scientific discoveries. This prejudice has in a considerable measure affected the attitude toward commerce in general compared with that toward production. Even economists who regard themselves as definitely immune to the crud ematerialist fallacies of the past constantly commit the same mistake where activities directed toward the acquisition of such practical knowledge are concerned—apparently because in their scheme of things all such knowledge is supposed to be “given.” The common idea now seems to be that all such knowledge should as a matter of course be readily at the command of everybody, and the reproach of irrationality leveled against the existing economic order is frequently based on the fact that it is not so available. This view disregards the fact that the method by which such knowledge can be made as widely available as possible is precisely the problem to which we have to find an answer.

4

If it is fashionable today to minimize the importance of the knowledge of the particular circumstances of time and place, this is closely connected with the smaller importance which is now attached to change as such. Indeed, there are few points on which the assumptions made (usually only implicitly) by the “planners” differ from those of their opponents as much as with regard to the significance and frequency of changes which will make substantial alterations of production plans necessary. Of course, if detailed economic plans could be laid down for fairly long periods in advance and then closely adhered to, so that no further economic decisions of importance would be re-

Individualism and Economic Order

quired, the task of drawing up a comprehensive plan governing all economic activity would be much less formidable.

It is, perhaps, worth stressing that economic problems arise always and only in consequence of change. As long as things continue as before, or at least as they were expected to, there arise no new problems requiring a decision, no need to form a new plan. The belief that changes, or at least day-to-day adjustments, have become less important in modern times implies the contention that economic problems also have become less important. This belief in the decreasing importance of change is, for that reason, usually held by the same people who argue that the importance of economic considerations has been driven into the background by the growing importance of technological knowledge.

Is it true that, with the elaborate apparatus of modern production, economic decisions are required only at long intervals, as when a new factory is to be erected or a new process to be introduced? Is it true that, once a plant has been built, the rest is all more or less mechanical, determined by the character of the plant, and leaving little to be changed in adapting to the ever changing circumstances of the moment?

The fairly widespread belief in the affirmative is not, as far as I can ascertain, borne out by the practical experience of the businessman. In a competitive industry at any rate—and such an industry alone can serve as a test—the task of keeping cost from rising requires constant struggle, absorbing a great part of the energy of the manager. How easy it is for an inefficient manager to dissipate the differentials on which profitability rests and that it is possible, with the same technical facilities, to produce with a great variety of costs are among the commonplaces of business experience which do not seem to be equally familiar in the study of the economist. The very strength of the desire, constantly voiced by producers and engineers, to be allowed to proceed untrammelled by considerations of money costs, is eloquent testimony to the extent to which these factors enter into their daily work.

One reason why economists are increasingly apt to forget about the constant small changes which make up the whole economic pic-

The Use of Knowledge in Society

ture is probably their growing preoccupation with statistical aggregates, which show a very much greater stability than the movements of the detail. The comparative stability of the aggregates cannot, however, be accounted for—as the statisticians occasionally seem to be inclined to do—by the “law of large numbers” or the mutual compensation of random changes. The number of elements with which we have to deal is not large enough for such accidental forces to produce stability. The continuous flow of goods and services is maintained by constant deliberate adjustments, by new dispositions made every day in the light of circumstances not known the day before, by B stepping in at once when A fails to deliver. Even the large and highly mechanized plant keeps going largely because of an environment upon which it can draw for all sorts of unexpected needs: tiles for its roof, stationery or its forms, and all the thousand and one kinds of equipment in which it cannot be self-contained and which the plans for the operation of the plant require to be readily available in the market.

This is, perhaps, also the point where I should briefly mention the fact that the sort of knowledge with which I have been concerned is knowledge of the kind which by its nature cannot enter into statistics and therefore cannot be conveyed to any central authority in statistical form. The statistics which such a central authority would have to use would have to be arrived at precisely by abstracting from minor differences between the things, by lumping together, as resources of one kind, items which differ as regards location, quality, and other particulars, in a way which may be very significant for the specific decision. It follows from this that central planning based on statistical information by its nature cannot take direct account of these circumstances of time and place and that the central planner will have to find some way or other in which the decisions depending on them can be left to the “man on the spot.”

5

If we can agree that the economic problem of society is mainly one of rapid adaptation to changes in the particular circumstances of time and place, it would seem to follow that the ultimate decisions must be

Individualism and Economic Order

left to the people who are familiar with these circumstances, who know directly of the relevant changes and of the resources immediately available to meet them. We cannot expect that this problem will be solved by first communicating all this knowledge to a central board which, after integrating all knowledge, issues its orders. We must solve it by some form of decentralization. But this answers only part of our problem. We need decentralization because only thus can we insure that the knowledge of the particular circumstances of time and place will be promptly used. But the "man on the spot" cannot decide solely on the basis of his limited but intimate knowledge of the facts of his immediate surroundings. There still remains the problem of communicating to him such further information as he needs to fit his decisions into the whole pattern of changes of the larger economic system.

How much knowledge does he need to do so successfully? Which of the events which happen beyond the horizon of his immediate knowledge are of relevance to his immediate decision, and how much of them need he know?

There is hardly anything that happens anywhere in the world that *might* not have an effect on the decision he ought to make. But he need not know of these events as such, nor of *all* their effects. It does not matter for him *why* at the particular moment more screws of one size than of another are wanted, *why* paper bags are more readily available than canvas bags, or *why* skilled labor, or particular machine tools, have for the moment become more difficult to obtain. All that is significant for him is *how much more or less* difficult to procure they have become compared with other things with which he is also concerned, or how much more or less urgently wanted are the alternative things he produces or uses. It is always a question of the relative importance of the particular things with which he is concerned, and the causes which alter their relative importance are of no interest to him beyond the effect on those concrete things of his own environment.

It is in this connection that what I have called the "economic calcu-

The Use of Knowledge in Society

lus” (or the Pure Logic of Choice) helps us, at least by analogy, to see how this problem can be solved, and in fact is being solved, by the price system. Even the single controlling mind, in possession of all the data for some small, self-contained economic system, would not—every time some small adjustment in the allocation of resources had to be made—go explicitly through all the relations between ends and means which might possibly be affected. It is indeed the great contribution of the Pure Logic of Choice that it has demonstrated conclusively that even such a single mind could solve this kind of problem only by constructing and constantly using rates of equivalence (or “values,” or “marginal rates of substitution”), that is, by attaching to each kind of scarce resource a numerical index which cannot be derived from any property possessed by that particular thing, but which reflects, or in which is condensed, its significance in view of the whole means-end structure. In any small change he will have to consider only these quantitative indices (or “values”) in which all the relevant information is concentrated; and, by adjusting the quantities one by one, he can appropriately rearrange his dispositions without having to solve the whole puzzle *ab initio* or without needing at any stage to survey it at once in all its ramifications.

Fundamentally, in a system in which the knowledge of the relevant facts is dispersed among many people, prices can act to co-ordinate the separate actions of different people in the same way as subjective values help the individual to co-ordinate the parts of his plan. It is worth contemplating for a moment a very simple and commonplace instance of the action of the price system to see what precisely it accomplishes. Assume that somewhere in the world a new opportunity for the use of some raw material, say, tin, has arisen, or that one of the sources of supply of tin has been eliminated. It does not matter for our purpose—and it is significant that it does not matter—which of these two causes has made tin more scarce. All that the users of tin need to know is that some of the tin they used to consume is now more profitably employed elsewhere and that, in consequence, they must economize tin. There is no need for the great majority of them

Individualism and Economic Order

even to know where the more urgent need has arisen, or in favor of what other needs they ought to husband the supply. If only some of them know directly of the new demand, and switch resources over to it, and if the people who are aware of the new gap thus created in turn fill it from still other sources, the effect will rapidly spread throughout the whole economic system and influence not only all the uses of tin but also those of its substitutes and the substitutes of these substitutes, the supply of all the things made of tin, and their substitutes, and so on; and all this without the great majority of those instrumental in bringing about these substitutions knowing anything at all about the original cause of these changes. The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many intermediaries the relevant information is communicated to all. The mere fact that there is one price for any commodity—or rather that local prices are connected in a manner determined by the cost of transport, etc.—brings about the solution which (it is just conceptually possible) might have been arrived at by one single mind possessing all the information which is in fact dispersed among all the people involved in the process.

6

We must look at the price system as such a mechanism for communicating information if we want to understand its real function—a function which, of course, it fulfils less perfectly as prices grow more rigid. (Even when quoted prices have become quite rigid, however, the forces which would operate through changes in price still operate to a considerable extent through changes in the other terms of the contract.) The most significant fact about this system is the economy of knowledge with which it operates, or how little the individual participants need to know in order to be able to take the right action. In abbreviated form, by a kind of symbol, only the most essential information is passed on and passed on only to those concerned. It is

The Use of Knowledge in Society

more than a metaphor to describe the price system as a kind of machinery for registering change, or a system of telecommunications which enables individual producers to watch merely the movement of a few pointers, as an engineer might watch the hands of a few dials, in order to adjust their activities to changes of which they may never know more than is reflected in the price movement.

Of course, these adjustments are probably never “perfect” in the sense in which the economist conceives of them in his equilibrium analysis. But I fear that our theoretical habits of approaching the problem with the assumption of more or less perfect knowledge on the part of almost everyone has made us somewhat blind to the true function of the price mechanism and led us to apply rather misleading standards in judging its efficiency. The marvel is that in a case like that of a scarcity of one raw material, without an order being issued, without more than perhaps a handful of people knowing the cause, tens of thousands of people whose identity could not be ascertained by months of investigation, are made to use the material or its products more sparingly; that is, they move in the right direction. This is enough of a marvel even if, in a constantly changing world, not all will hit it off so perfectly that their profit rates will always be maintained at the same even or “normal” level.

I have deliberately used the word “marvel” to shock the reader out of the complacency with which we often take the working of this mechanism for granted. I am convinced that if it were the result of deliberate human design, and if the people guided by the price changes understood that their decisions have significance far beyond their immediate aim, this mechanism would have been acclaimed as one of the greatest triumphs of the human mind. Its misfortune is the double one that it is not the product of human design and that the people guided by it usually do not know why they are made to do what they do. But those who clamor for “conscious direction”—and who cannot believe that anything which has evolved without design (and even without our understanding it) should solve problems which we should not be able to solve consciously—should remember

Individualism and Economic Order

this: The problem is precisely how to extend the span of our utilization of resources beyond the span of the control of any one mind; and, therefore, how to dispense with the need of conscious control and how to provide inducements which will make the individuals do the desirable things without anyone having to tell them what to do.

The problem which we meet here is by no means peculiar to economics but arises in connection with nearly all truly social phenomena, with language and with most of our cultural inheritance, and constitutes really the central theoretical problem of all social science. As Alfred Whitehead has said in another connection, "It is a profoundly erroneous truism, repeated by all copy-books and by eminent people when they are making speeches, that we should cultivate the habit of thinking what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking about them." This is of profound significance in the social field. We make constant use of formulas, symbols, and rules whose meaning we do not understand and through the use of which we avail ourselves of the assistance of knowledge which individually we do not possess. We have developed these practices and institutions by building upon habits and institutions which have proved successful in their own sphere and which have in turn become the foundation of the civilization we have built up.

The price system is just one of those formations which man has learned to use (though he is still very far from having learned to make the best use of it) after he had stumbled upon it without understanding it. Through it not only a division of labor but also a co-ordinated utilization of resources based on an equally divided knowledge has become possible. The people who like to deride any suggestion that this may be so usually distort the argument by insinuating that it asserts that by some miracle just that sort of system has spontaneously grown up which is best suited to modern civilization. It is the other way round: man has been able to develop that division of labor on which our civilization is based because he happened to stumble upon

The Use of Knowledge in Society

a method which made it possible. Had he not done so, he might still have developed some other, altogether different, type of civilization, something like the "state" of the termite ants, or some other altogether unimaginable type. All that we can say is that nobody has yet succeeded in designing an alternative system in which certain features of the existing one can be preserved which are dear even to those who most violently assail it—such as particularly the extent to which the individual can choose his pursuits and consequently freely use his own knowledge and skill.

7

It is in many ways fortunate that the dispute about the indispensability of the price system for any rational calculation in a complex society is now no longer conducted entirely between camps holding different political views. The thesis that without the price system we could not preserve a society based on such extensive division of labor as ours was greeted with a howl of derision when it was first advanced by Von Mises twenty-five years ago. Today the difficulties which some still find in accepting it are no longer mainly political, and this makes for an atmosphere much more conducive to reasonable discussion. When we find Leon Trotsky arguing that "economic accounting is unthinkable without market relations"; when Professor Oscar Lange promises Professor von Mises a statue in the marble halls of the future Central Planning Board; and when Professor Abba P. Lerner rediscovers Adam Smith and emphasizes that the essential utility of the price system consists in inducing the individual, while seeking his own interest, to do what is in the general interest, the differences can indeed no longer be ascribed to political prejudice. The remaining dissent seems clearly to be due to purely intellectual, and more particularly methodological, differences.

A recent statement by Joseph Schumpeter in his *Capitalism, Socialism, and Democracy* provides a clear illustration of one of the methodological differences which I have in mind. Its author is pre-eminent

Individualism and Economic Order

among those economists who approach economic phenomena in the light of a certain branch of positivism. To him these phenomena accordingly appear as objectively given quantities of commodities impinging directly upon each other, almost, it would seem, without any intervention of human minds. Only against this background can I account for the following (to me startling) pronouncement. Professor Schumpeter argues that the possibility of a rational calculation in the absence of markets for the factors of production follows for the theorist “from the elementary proposition that consumers in evaluating (‘demanding’) consumers’ goods *ipso facto* also evaluate the means of production which enter into the production of these goods.”¹

Taken literally, this statement is simply untrue. The consumers do nothing of the kind. What Professor Schumpeter’s “*ipso facto*” presumably means is that the valuation of the factors of production is implied in, or follows necessarily from, the valuation of consumers’ goods. But this, too, is not correct. Implication is a logical relationship which can be meaningfully asserted only of propositions simultaneously present to one and the same mind. It is evident, however, that the values of the factors of production do not depend solely on the valuation of the consumers’ goods but also on the conditions of supply of the various factors of production. Only to a mind to which all these facts were simultaneously known would the answer necessarily follow from the facts given to it. The practical problem, however, arises precisely because these facts are never so given to a single mind, and

1. *Capitalism, Socialism, and Democracy* (New York: Harper & Bros., 1942), p. 175. Professor Schumpeter is, I believe, also the original author of the myth that Pareto and Barone have “solved” the problem of socialist calculation. What they, and many others, did was merely to state the conditions which a rational allocation of resources would have to satisfy and to point out that these were essentially the same as the conditions of equilibrium of a competitive market. This is something altogether different from showing how the allocation of resources satisfying these conditions can be found in practice. Pareto himself (from whom Barone has taken practically everything he has to say), far from claiming to have solved the practical problem, in fact explicitly denies that it can be solved without the help of the market. See his *Manuel d’économie pure* (2d ed., 1927), pp. 233–34. The relevant passage is quoted in an English translation at the beginning of my article on “Socialist Calculation: The Competitive ‘Solution,’” in *Economica*, VIII, No. 26 (new ser., 1940), 125; reprinted below as chapter viii.

The Use of Knowledge in Society

because, in consequence, it is necessary that in the solution of the problem knowledge should be used that is dispersed among many people.

The problem is thus in no way solved if we can show that all the facts, *if* they were known to a single mind (as we hypothetically assume them to be given to the observing economist), would uniquely determine the solution; instead we must show how a solution is produced by the interactions of people each of whom possesses only partial knowledge. To assume all the knowledge to be given to a single mind in the same manner in which we assume it to be given to us as the explaining economists is to assume the problem away and to disregard everything that is important and significant in the real world.

That an economist of Professor Schumpeter's standing should thus have fallen into a trap which the ambiguity of the term "datum" sets to the unwary can hardly be explained as a simple error. It suggests rather that there is something fundamentally wrong with an approach which habitually disregards an essential part of the phenomena with which we have to deal: the unavoidable imperfection of man's knowledge and the consequent need for a process by which knowledge is constantly communicated and acquired. Any approach, such as that of much of mathematical economics with its simultaneous equations, which in effect starts from the assumption that people's *knowledge* corresponds with the objective *facts* of the situation, systematically leaves out what is our main task to explain. I am far from denying that in our system equilibrium analysis has a useful function to perform. But when it comes to the point where it misleads some of our leading thinkers into believing that the situation which it describes has direct relevance to the solution of practical problems, it is high time that we remember that it does not deal with the social process at all and that it is no more than a useful preliminary to the study of the main problem.

V. The Meaning of Competition*

1

THERE are signs of increasing awareness among economists that what they have been discussing in recent years under the name of "competition" is not the same thing as what is thus called in ordinary language. But, although there have been some valiant attempts to bring discussion back to earth and to direct attention to the problems of real life, notably by J. M. Clark and F. Machlup,¹ the general view seems still to regard the conception of competition currently employed by economists as the significant one and to treat that of the businessman as an abuse. It appears to be generally held that the so-called theory of "perfect competition" provides the appropriate model for judging the effectiveness of competition in real life and that, to the extent that real competition differs from that model, it is undesirable and even harmful.

For this attitude there seems to me to exist very little justification. I shall attempt to show that what the theory of perfect competition discusses has little claim to be called "competition" at all and that its conclusions are of little use as guides to policy. The reason for this seems to me to be that this theory throughout assumes that state of affairs already to exist which, according to the truer view of the older theory, the process of competition tends to bring about (or to approximate) and that, if the state of affairs assumed by the theory of perfect competition ever existed, it would not only deprive of their scope all the activities which the verb "to compete" describes but would make them virtually impossible.

* This essay reproduces the substance of the Stafford Little Lecture delivered at Princeton University on May 20, 1946.

1. J. M. Clark, "Toward a Concept of Workable Competition," *American Economic Review*, Vol. XXX (June, 1940); F. Machlup, "Competition, Pliopoly, and Profit," *Economica*, Vol. IX (new ser.; February and May, 1942).

The Meaning of Competition

If all this affected only the use of the word "competition," it would not matter a great deal. But it seems almost as if economists by this peculiar use of language were deceiving themselves into the belief that, in discussing "competition," they are saying something about the nature and significance of the process by which the state of affairs is brought about which they merely assume to exist. In fact, this moving force of economic life is left almost altogether undiscussed.

I do not wish to discuss here at any length the reasons which have led the theory of competition into this curious state. As I have suggested elsewhere in this volume,² the tautological method which is appropriate and indispensable for the analysis of individual action seems in this instance to have been illegitimately extended to problems in which we have to deal with a social process in which the decisions of many individuals influence one another and necessarily succeed one another in time. The economic calculus (or the Pure Logic of Choice) which deals with the first kind of problem consist of an apparatus of classification of possible human attitudes and provides us with a technique for describing the interrelations of the different parts of a single plan. Its conclusions are implicit in its assumptions: the desires and the knowledge of the facts, which are assumed to be simultaneously present to a single mind, determine a unique solution. The relations discussed in this type of analysis are logical relations, concerned solely with the conclusions which follow for the mind of the planning individual from the given premises.

When we deal, however, with a situation in which a number of persons are attempting to work out their separate plans, we can no longer assume that the data are the same for all the planning minds. The problem becomes one of how the "data" of the different individuals on which they base their plans are adjusted to the objective facts of their environment (which includes the actions of the other people). Although in the solution of this type of problem we still must make use of our technique for rapidly working out the implications of a given set of data, we have now to deal not only with several separate sets of

2. See the second and fourth chapters.

Individualism and Economic Order

data of the different persons but also—and this is even more important—with a process which necessarily involves continuous changes in the data for the different individuals. As I have suggested before, the causal factor enters here in the form of the acquisition of new knowledge by the different individuals or of changes in their data brought about by the contacts between them.

The relevance of this for my present problem will appear when it is recalled that the modern theory of competition deals almost exclusively with a state of what is called “competitive equilibrium” in which it is assumed that the data for the different individuals are fully adjusted to each other, while the problem which requires explanation is the nature of the process by which the data are thus adjusted. In other words, the description of competitive equilibrium does not even attempt to say that, if we find such and such conditions, such and such consequences will follow, but confines itself to defining conditions in which its conclusions are already implicitly contained and which may conceivably exist but of which it does not tell us how they can ever be brought about. Or, to anticipate our main conclusion in a brief statement, competition is by its nature a dynamic process whose essential characteristics are assumed away by the assumptions underlying static analysis.

2

That the modern theory of competitive equilibrium *assumes* the situation to exist which a true explanation ought to account for as the effect of the competitive process is best shown by examining the familiar list of conditions found in any modern textbook. Most of these conditions, incidentally, not only underlie the analysis of “perfect” competition but are equally assumed in the discussion of the various “imperfect” or “monopolistic” markets, which throughout assume certain unrealistic “perfections.”³ For our immediate purpose, however, the theory of perfect competition will be the most instructive case to examine.

3. Particularly the assumptions that *at all times* a uniform price must rule for a given commodity throughout the market and that sellers know the shape of the demand curve.

The Meaning of Competition

While different authors may state the list of essential conditions of perfect competition differently, the following is probably more than sufficiently comprehensive for our purpose, because, as we shall see, those conditions are not really independent of each other. According to the generally accepted view, perfect competition presupposes:

1. A homogeneous commodity offered and demanded by a large number of relatively small sellers or buyers, none of whom expects to exercise by his action a perceptible influence on price.
2. Free entry into the market and absence of other restraints on the movement of prices and resources.
3. Complete knowledge of the relevant factors on the part of all participants in the market.

We shall not ask at this stage precisely for what these conditions are required or what is implied if they are assumed to be given. But we must inquire a little further about their meaning, and in this respect it is the third condition which is the critical and obscure one. The standard can evidently not be perfect knowledge of everything affecting the market on the part of every person taking part in it. I shall here not go into the familiar paradox of the paralyzing effect really perfect knowledge and foresight would have on all action.⁴ It will be obvious also that nothing is solved when we assume everybody to know everything and that the real problem is rather how it can be brought about that as much of the available knowledge as possible is used. This raises for a competitive society the question, not how we can “find” the people who know best, but rather what institutional arrangements are necessary in order that the unknown persons who have knowledge specially suited to a particular task are most likely to be attracted to that task. But we must inquire a little further what sort of knowledge it is that is supposed to be in possession of the parties of the market.

If we consider the market for some kind of finished consumption goods and start with the position of its producers or sellers, we shall find, first, that they are assumed to know the lowest cost at which the commodity can be produced. Yet this knowledge which is assumed to

4. See O. Morgenstern, “Vollkommene Voraussicht und wirtschaftliches Gleichgewicht,” *Zeitschrift für Nationalökonomie*, Vol. VI (1935).

Individualism and Economic Order

be given to begin with is one of the main points where it is only through the process of competition that the facts will be discovered. This appears to me one of the most important of the points where the starting-point of the theory of competitive equilibrium assumes away the main task which only the process of competition can solve. The position is somewhat similar with respect to the second point on which the producers are assumed to be fully informed: the wishes and desires of the consumers, including the kinds of goods and services which they demand and the prices they are willing to pay. These cannot properly be regarded as given facts but ought rather to be regarded as problems to be solved by the process of competition.

The same situation exists on the side of the consumers or buyers. Again the knowledge they are supposed to possess in a state of competitive equilibrium cannot be legitimately assumed to be at their command before the process of competition starts. Their knowledge of the alternatives before them is the result of what happens on the market, of such activities as advertising, etc.; and the whole organization of the market serves mainly the need of spreading the information on which the buyer is to act.

The peculiar nature of the assumptions from which the theory of competitive equilibrium starts stands out very clearly if we ask which of the activities that are commonly designated by the verb "to compete" would still be possible if those conditions were all satisfied. Perhaps it is worth recalling that, according to Dr. Johnson, competition is "the action of endeavouring to gain what another endeavours to gain at the same time." Now, how many of the devices adopted in ordinary life to that end would still be open to a seller in a market in which so-called "perfect competition" prevails? I believe that the answer is exactly none. Advertising, undercutting, and improving ("differentiating") the goods or services produced are all excluded by definition—"perfect" competition means indeed the absence of all competitive activities.

Especially remarkable in this connection is the explicit and complete exclusion from the theory of perfect competition of all personal rela-

The Meaning of Competition

tionships existing between the parties.⁵ In actual life the fact that our inadequate knowledge of the available commodities or services is made up for by our experience with the persons or firms supplying them—that competition is in a large measure competition for reputation or good will—is one of the most important facts which enables us to solve our daily problems. The function of competition is here precisely to teach us *who* will serve us well: which grocer or travel agency, which department store or hotel, which doctor or solicitor, we can expect to provide the most satisfactory solution for whatever particular personal problem we may have to face. Evidently in all these fields competition may be very intense, just because the services of the different persons or firms will never be exactly alike, and it will be owing to this competition that we are in a position to be served as well as we are. The reasons competition in this field is described as imperfect have indeed nothing to do with the competitive character of the activities of these people; it lies in the nature of the commodities or services themselves. If no two doctors are perfectly alike, this does not mean that the competition between them is less intense but merely that any degree of competition between them will not produce exactly those results which it would if their services were exactly alike. This is not a purely verbal point. The talk about the defects or competition when we are in fact talking about the necessary difference between commodities and services conceals a very real confusion and leads on occasion to absurd conclusions.

While on a first glance the assumption concerning the perfect knowledge possessed by the parties may seem the most startling and artificial of all those on which the theory of perfect competition is based, it may in fact be no more than a consequence of, and in part even justified by, another of the presuppositions on which it is founded. If, indeed, we start by assuming that a large number of people are producing the same commodity and command the same objective facili-

5. Cf. G. J. Stigler, *The Theory of Price* (1946), p. 24: "Economic relationships are never perfectly competitive if they involve any personal relationships between economic units" (see also *ibid.*, p. 226).

Individualism and Economic Order

ties and opportunities for doing so, then indeed it might be made plausible (although this has, to my knowledge, never been attempted) that they will in time all be led to know most of the facts relevant for judging the market of that commodity. Not only will each producer by his experience learn the same facts as every other but also he will thus come to know what his fellows know and in consequence the elasticity of the demand for his own product. The condition where different manufacturers produce the identical product under identical conditions is in fact the most favorable for producing that state of knowledge among them which perfect competition requires. Perhaps this means no more than that the commodities can be identical in the sense in which it is alone relevant for our understanding human action only if people hold the same views about them, although it should also be possible to state a set of physical conditions which is favorable to all those who are concerned with a set of closely interrelated activities learning the facts relevant for their decisions.

However that be, it will be clear that the facts will not always be as favorable to this result as they are when many people are at least in a position to produce the same article. The conception of the economic system as divisible into distinct markets for separate commodities is after all very largely the product of the imagination of the economist and certainly is not the rule in the field of manufacture and of personal services, to which the discussion about competition so largely refers. In fact, it need hardly be said, no products of two producers are ever exactly alike, even if it were only because, as they leave his plant, they must be at different places. These differences are part of the facts which create our economic problem, and it is little help to answer it on the assumption that they are absent.

The belief in the advantages of perfect competition frequently leads enthusiasts even to argue that a more advantageous use of resources would be achieved if the existing variety of products were reduced by *compulsory* standardization. Now, there is undoubtedly much to be said in many fields for assisting standardization by agreed recommendations or standards which are to apply unless different requirements

The Meaning of Competition

are explicitly stipulated in contracts. But this is something very different from the demands of those who believe that the variety of people's tastes should be disregarded and the constant experimentation with improvements should be suppressed in order to obtain the advantages of perfect competition. It would clearly not be an improvement to build all houses exactly alike in order to create a perfect market for houses, and the same is true of most other fields where differences between the individual products prevent competition from ever being perfect.

3

We shall probably learn more about the nature and significance of the competitive process if for a while we forget about the artificial assumptions underlying the theory of perfect competition and ask whether competition would be any less important if, for example, no two commodities were ever exactly alike. If it were not for the difficulty of the analysis of such a situation, it would be well worth while to consider in some detail the case where the different commodities could not be readily classed into distinct groups, but where we had to deal with a continuous range of close substitutes, every unit somewhat different from the other but without any marked break in the continuous range. The result of the analysis of competition in such a situation might in many respects be more relevant to the conditions of real life than those of the analysis of competition in a single industry producing a homogeneous commodity sharply differentiated from all others. Or, if the case where no two commodities are exactly alike be thought to be too extreme, we might at least turn to the case where no two producers produce exactly the same commodity, as is the rule not only with all personal services but also in the markets of many manufactured commodities, such as the markets for books or musical instruments.

For our present purpose I need not attempt anything like a complete analysis of such kinds of markets but shall merely ask what would be the role of competition in them. Although the result would, of course, within fairly wide margins be indeterminate, the market would still

Individualism and Economic Order

bring about a set of prices at which each commodity sold just cheap enough to outbid its potential close substitutes—and this in itself is no small thing when we consider the unsurmountable difficulties of discovering even such a system of prices by any other method except that of trial and error in the market, with the individual participants gradually learning the relevant circumstances. It is true, of course, that in such a market correspondence between prices and marginal costs is to be expected only to the degree that elasticities of demand for the individual commodities approach the conditions assumed by the theory of perfect competition or that elasticities of substitution between the different commodities approach infinity. But the point is that in this case this standard of perfection as something desirable or to be aimed at is wholly irrelevant. The basis of comparison, on the grounds of which the achievement of competition ought to be judged, cannot be a situation which is different from the objective facts and which cannot be brought about by any known means. It ought to be the situation as it would exist if competition were prevented from operating. Not the approach to an unachievable and meaningless ideal but the improvement upon the conditions that would exist without competition should be the test.

In such a situation how would conditions differ, if competition were “free” in the traditional sense, from those which would exist if, for example, only people licensed by authority were allowed to produce particular things, or prices were fixed by authority, or both? Clearly there would be not only no likelihood that the different things would be produced by those who knew best how to do it and therefore could do it at lowest cost but also no likelihood that all those things would be produced at all which, if the consumers had the choice, they would like best. There would be little relationship between actual prices and the lowest cost at which somebody would be able to produce these commodities; indeed, the alternatives between which both producers and consumers would be in a position to choose, their data, would be altogether different from what they would be under competition.

The real problem in all this is not whether we will get *given* com-

The Meaning of Competition

modities or services at *given* marginal costs but mainly by what commodities and services the needs of the people can be most cheaply satisfied. The solution of the economic problem of society is in this respect always a voyage of exploration into the unknown, an attempt to discover new ways of doing things better than they have been done before. This must always remain so as long as there are any economic problems to be solved at all, because all economic problems are created by unforeseen changes which require adaptation. Only what we have not foreseen and provided for requires new decisions. If no such adaptations were required, if at any moment we knew that all change had stopped and things would forever go on exactly as they are now, there would be no more questions of the use of resources to be solved.

A person who possesses the exclusive knowledge or skill which enables him to reduce the cost of production of a commodity by 50 per cent still renders an enormous service to society if he enters its production and reduces its price by only 25 per cent—not only through that price reduction but also through his additional saving of cost. But it is only through competition that we can assume that these possible savings of cost will be achieved. Even if in each instance prices were only just low enough to keep out producers which do not enjoy these or other equivalent advantages, so that each commodity were produced as cheaply as possible, though many may be sold at prices considerably above costs, this would probably be a result which could not be achieved by any other method than that of letting competition operate.

4

That in conditions of real life the position even of any two producers is hardly ever the same is due to facts which the theory of perfect competition eliminates by its concentration on a long-term equilibrium which in an ever changing world can never be reached. At any given moment the equipment of a particular firm is always largely determined by historical accident, and the problem is that it should make the best use of the given equipment (including the acquired capacities

Individualism and Economic Order

of the members of its staff) and not what it should do if it were given unlimited time to adjust itself to constant conditions. For the problem of the best use of the given durable but exhaustible resources the long-term equilibrium price with which a theory discussing "perfect" competition must be concerned is not only not relevant; the conclusions concerning policy to which preoccupation with this model leads are highly misleading and even dangerous. The idea that under "perfect" competition prices should be equal to long-run costs often leads to the approval of such antisocial practices as the demand for an "orderly competition" which will secure a fair return on capital and for the destruction of excess capacity. Enthusiasm for perfect competition in theory and the support of monopoly in practice are indeed surprisingly often found to live together.

This is, however, only one of the many points on which the neglect of the time element makes the theoretical picture of perfect competition so entirely remote from all that is relevant to an understanding of the process of competition. If we think of it, as we ought to, as a succession of events, it becomes even more obvious that in real life there will at any moment be as a rule only one producer who can manufacture a given article at the lowest cost and who may in fact sell below the cost of his next successful competitor, but who, while still trying to extend his market, will often be overtaken by somebody else, who in turn will be prevented from capturing the whole market by yet another, and so on. Such a market would clearly never be in a state of perfect competition, yet competition in it might not only be as intense as possible but would also be the essential factor in bringing about the fact that the article in question is supplied at any moment to the consumer as cheaply as this can be done by any known method.

When we compare an "imperfect" market like this with a relatively "perfect" market as that of, say, grain, we shall now be in a better position to bring out the distinction which has been underlying this whole discussion—the distinction between the underlying objective facts of a situation which cannot be altered by human activity and the nature of the competitive activities by which men adjust themselves to the

The Meaning of Competition

situation. Where, as in the latter case, we have a highly organized market of a fully standardized commodity produced by many producers, there is little need or scope for competitive activities because the situation is such that the conditions which these activities might bring about are already satisfied to begin with. The best ways of producing the commodity, its character and uses, are most of the time known to nearly the same degree to all members of the market. The knowledge of any important change spreads so rapidly and the adaptation to it is so soon effected that we usually simply disregard what happens during these short transition periods and confine ourselves to comparing the two states of near-equilibrium which exist before and after them. But it is during this short and neglected interval that the forces of competition operate and become visible, and it is the events during this interval which we must study if we are to "explain" the equilibrium which follows it.

It is only in a market where adaptation is slow compared with the rate of change that the process of competition is in continuous operation. And though the reason why adaptation is slow *may* be that competition is weak, e.g., because there are special obstacles to entry into the trade, or because of some other factors of the character of natural monopolies, slow adaptation does by no means necessarily mean weak competition. When the variety of near-substitutes is great and rapidly changing, where it takes a long time to find out about the relative merits of the available alternatives, or where the need for a whole class of goods or services occurs only discontinuously at irregular intervals, the adjustment must be slow even if competition is strong and active.

The confusion between the objective facts of the situation and the character of the human responses to it tends to conceal from us the important fact that competition is the more important the more complex or "imperfect" are the objective conditions in which it has to operate. Indeed, far from competition being beneficial only when it is "perfect," I am inclined to argue that the need for competition is nowhere greater than in fields in which the nature of the commodities or services makes it impossible that it ever should create a perfect market

Individualism and Economic Order

in the theoretical sense. The inevitable actual imperfections of competition are as little an argument against competition as the difficulties of achieving a perfect solution of any other task are an argument against attempting to solve it at all, or as little as imperfect health is an argument against health.

In conditions where we can never have many people offering the same homogeneous product or service, because of the ever changing character of our needs and our knowledge, or of the infinite variety of human skills and capacities, the ideal state cannot be one requiring an identical character of large numbers of such products and services. The economic problem is a problem of making the best use of what resources we have, and not one of what we should do if the situation were different from what it actually is. There is no sense in talking of a use of resources "as if" a perfect market existed, if this means that the resources would have to be different from what they are, or in discussing what somebody with perfect knowledge would do if our task must be to make the best use of the knowledge the existing people have.

5

The argument in favor of competition does not rest on the conditions that would exist if it were perfect. Although, where the objective facts would make it possible for competition to approach perfection, this would also secure the most effective use of resources, and, although there is therefore every case for removing human obstacles to competition, this does not mean that competition does not also bring about as effective a use of resources as can be brought about by any known means where in the nature of the case it must be imperfect. Even where free entry will secure no more than that at any one moment all the goods and services for which there would be an effective demand if they were available are in fact produced at the least current⁶ expenditure of resources at which, in the given historical situation, they can be produced, even though the price the consumer is made to pay for them

6. "Current" cost in this connection excludes all true by-gones but includes, of course, "user cost."

The Meaning of Competition

is considerably higher and only just below the cost of the next best way in which his need could be satisfied, this, I submit, is more than we can expect from any other known system. The decisive point is still the elementary one that it is most unlikely that, without artificial obstacles which government activity either creates or can remove, any commodity or service will for any length of time be available only at a price at which outsiders could expect a more than normal profit if they entered the field.

The practical lesson of all this, I think, is that we should worry much less about whether competition in a given case is perfect and worry much more whether there is competition at all. What our theoretical models of separate industries conceal is that in practice a much bigger gulf divides competition from no competition than perfect from imperfect competition. Yet the current tendency in discussion is to be intolerant about the imperfections and to be silent about the prevention of competition. We can probably still learn more about the real significance of competition by studying the results which regularly occur where competition is deliberately suppressed than by concentrating on the shortcomings of actual competition compared with an ideal which is irrelevant for the given facts. I say advisedly "where competition is deliberately suppressed" and not merely "where it is absent," because its main effects are usually operating, even if more slowly, so long as it is not outright suppressed with the assistance or the tolerance of the state. The evils which experience has shown to be the regular consequence of a suppression of competition are on a different plane from those which the imperfections of competition may cause. Much more serious than the fact that prices may not correspond to marginal cost is the fact that, with an entrenched monopoly, costs are likely to be much higher than is necessary. A monopoly based on superior efficiency, on the other hand, does comparatively little harm so long as it is assured that it will disappear as soon as anyone else becomes more efficient in providing satisfaction to the consumers.

In conclusion I want for a moment to go back to the point from which I started and restate the most important conclusion in a more

Individualism and Economic Order

general form. Competition is essentially a process of the formation of opinion: by spreading information, it creates that unity and coherence of the economic system which we presuppose when we think of it as one market. It creates the views people have about what is best and cheapest, and it is because of it that people know at least as much about possibilities and opportunities as they in fact do. It is thus a process which involves a continuous change in the data and whose significance must therefore be completely missed by any theory which treats these data as constant.