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Economics—The Imperial Science?

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The boundaries between the various sciences grow up pragmatically to inscribe the normal areas of work of groups of scholars who interact much more with each other than with other groups. The boundaries will shift, or become downright fuzzy, as a science uncovers new areas of study or new domains of application of the science. Physics and chemistry were much more easily distinguished in 1900 than they are today, and the traditional disciplines of zoology and botany have been swallowed up into biology. The Nobel prize in medicine has been won by a physicist for devising the CAT Scanner.

It is universally true, I am sure, that no science actively studies all the subjects that fall within its definition at any one time. At the beginning of the nineteenth century, the common definition of economics was the study of the production, the distribution and the consumption of wealth. Yet no attention at all was devoted to the accumulation of knowledge of the sorts we now call research and development, although that was the time when the pace of the Industrial Revolution was at a historical peak. The classical economics was equally innocent of a theory of consumer behavior. Again, between 1860 and 1960 economists pretty well abandoned the field of the economics of population.

If it was true that not all of the area claimed by economists was worked in the nineteenth century, it became much more true in 1932, when (Lord) Lionel Robbins proposed a definition of economics which is still the most widely accepted: “Economics is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses.”¹

There are thus three ingredients in an economic decision and consequent economic act:

1. There are several given goals; more than one or there would be no problem of choice.

* Lecture delivered on April 10, 1984 at the University of Chicago.

¹ *An Essay on the Nature and Significance of Economic Science* (2nd ed., London, Macmillan, 1935), p. 16.

2. There are scarce resources; if they are not scarce all goals can be fulfilled and at most a certain technological knowledge of how to use the resources is needed to achieve fulfillment of goals.

3. The scarce resources can serve at least two goals, for with one-purpose resources there is no problem of choice in allocating the resources among the competing ends.

When one reflects on the Robbins definition, does it not make economics the study of all purposive human behavior? If a person seeks to attain a given end—it can be as important as a livelihood or as fugitive as an interlude of quiet from noisy children—does not one seek to achieve the desired end by efficient action, by action calculated to achieve the end easily? Frank Knight, a sardonic critic as well as an illustrious member of the economists' clan, observed that efficiency is so ingrained in people that when they go for a walk, they take shortcuts.

Consider the familiar statement that free lunches do not exist. The resources—be they caviar or soup, a chef or a waiter—could be devoted to other useful purposes if they had not gone into the preparation of the lunch. From another viewpoint, if you are invited to a free lunch, it is to obtain something from you: something as innocent as your company or as villainous as your wealth. Even if the lunch yields only the pleasures of friendship, it has foreclosed other uses of your time. There are ends and scarce, versatile means in virtually every conscious act of life.

I do not plan to defend economics on this occasion but two related objections to accepting this sweeping domain of economic behavior will have occurred to many of you, and deserve attention. The first objection is that the easy way to make the Robbins definition of economics fit every action is to make it a tautology: to say that whatever a person does was what he wished to do. Aimless gazing at the stars becomes an efficient way to utilize time for which every other option is less enjoyable. Wrecking an automobile while drunk becomes the occasional byproduct of an efficient way of combining the tastes for speed and liquor.

The tautological formulation would indeed be easy to fall into, but economists have generally escaped that trap. We do this primarily by asserting the hypothesis—the so-called maintained hypothesis—that on average people are correct in anticipating the consequences of their actions. They buy medicines to get well, not to buy medicines; they choose an occupation with a reasonably good estimate of its advantages compared to other occupations, not simply because they like the occupation. The nearly infallible test of a non-tautological theory is that it can be wrong, and, alas, we have a more than sufficient supply of economic theories that we know to be inadequate.

The second objection is that the rational pursuit of goals may well be an instructive approach to the explanation of the behavior of professional

traders on a commodity exchange, flint-eyed bankers in their lending practices, and even young MBA's choosing an employer, but is there reason to believe this approach will illuminate behavior outside the commercial markets of the economy? Can it help explain about cops and robbers, the doings of legislators and judges, the conduct of young males and females in spring? We shall see.

Throughout the nineteenth and early twentieth centuries one may find occasional applications of economic analysis to unusual problems. (Bentham's extensive use of the felicific calculus is the one great exception in the nineteenth century.) Philip Wicksteed, a distinguished name in literature as well as in economics, said that "The fundamental laws of economic science, in fact, are the laws of life . . .",² and he gave picturesque examples such as the following:

Caesar, that day he overcame the Nervii, being surprised by the enemy, contracted his exhortation to the troops, but did not omit it. In his distribution of the time at his disposal the differential significance of prompt movement was higher than usual in relation to the differential significance of stirring words from their beloved and trusted commander addressed to soldiers as they entered upon action.³

Such examples, however, were exactly that: illustrations of standard economic theories such as, in Caesar's case, that one should distribute time among several uses so that the last minutes spent in each use are equal in their productivity. In these early applications there was no attempt to influence scholars in the field of application to use economic analysis: Neither an economist nor a military strategist wrote a manual of efficient conduct on economic principles for future Caesars.

The extensions of economics into other fields on a scale sufficient to generate a literature and a growing number of specialists are four:

1. The economics of the law: the application of economic analysis to legal rules and legal institutions. The pioneer was Aaron Director, the major figures Ronald Coase and Richard Posner.

2. The "new" economic history. The most influential figure is Robert Fogel.

3. The economic analysis of social structure and behavior. The chief subjects have been crime, racial discrimination, marriage and divorce, fertility, and the family. Gary Becker created this field, although in the area of crime he has important predecessors such as Beccaria and Bentham, and in the area of fertility, Malthus had received some attention.

4. The economic analysis of politics, including the regulation of economic life. The pioneer with respect to political parties was Anthony Downs,

² *The Commonsense of Political Economy* (London, George Routledge and Sons, 1933), I, 305.

³ *Ibid.*, II, 780.

and the pioneers in constitutional design were James Buchanan and Gordon Tullock, the founders of the “Public Choice” School.

I shall discuss each of these areas in which the economist-missionaries have ventured, often against apprehensive and hostile natives. I shall not attempt even to summarize the work (so far as I know it) because that would end up being a long list of articles, whose titles were hastily being read to you. Instead I shall in each case pick an important contribution of the economists, examine its nature, and make a guess as to the future importance of economics in the field.

1. *Law*

The writings of academic lawyers are usually devoted to the exegesis of the law or attempts at improving it, and in fact the two purposes are usually both present. Lawyers draw fine distinctions between cases which allow the legal system to accommodate both traditional legal principles and the infinite variety of individual cases, and this is not conducive to theoretical generalization of the type which is prevalent in economics. In particular the lawyer’s preoccupation with fairness and justice is uncongenial to a science in which these concepts have no established meaning. I may observe that the lack of established meanings of fairness and justice has not had a repressive effect on legal writing.

An immensely influential article by Ronald Coase, in which the law played a role that oddly enough was both indispensable and incidental, is the example I choose to portray the economist’s role. Coase asked the question: does it matter where legal rights and responsibilities are placed, so long as they are placed on definite persons?

Let us illustrate this question with the situation Coase selected. A cattle ranch neighbors on a wheat farm. Either a fence must be built or from time to time wandering cattle will consume or destroy some grain. Coase’s question was: Does it make any difference whether the obligation to build the fence or compensate for the damaged grain is assigned to the cattle rancher or the grain farmer? His astonishing answer was, no, it will make no difference. The assignment will not affect the number of cattle or the amount of grain or the precautions taken to reduce damage. For lawyers in particular, this conclusion went, I may say, against the grain.

Coase’s conclusion can be reached by the following argument. It is clearly desirable that the sum total of the produce of the two farming enterprises be as large as possible, for then *each* farmer can receive more than when there is a smaller pie to be divided. If the rancher is responsible for the damage, he will erect the fence or reduce his herd or pay for the grain damage, or pay the farmer to grow less grain, whichever is cheaper. If the farmer is responsible, exactly the same action will be chosen, except that now he compensates the rancher. In short, with either legal rule the

same farming practices will be used as if the two farms were jointly owned.

This result, now called the Coase theorem, raises a host of questions about the purpose of legal rules and the criteria by which they are chosen, and for the reformer, the criteria by which they should be chosen. The Coase theorem is not realistically applicable when many parties are concerned—for example, when one seeks to control a factory whose chimney spews noxious pollutants on five thousand households—because it is too costly for the factory owner and the thousands of households to contract with each other. Richard Posner was led to propose the hypothesis that the legal rules evolve in such a way as to reduce as much as possible the sum of the damages of the activity plus the costs of reaching and enforcing agreement. No one has found a persuasive way to test this interesting hypothesis. One reason that it is hard to test is that no one has produced a plausible alternative hypothesis against which to test the Posner hypothesis.

The Coase theorem and a host of other economic analyses which have since emerged of the law have not persuaded many lawyers to like economics, let alone to learn it, although it has become a requirement of a respectable law school that it have a house economist. The economists have persuaded many lawyers, however, that the effects of a law cannot be judged without consideration of the behavior it will elicit from the people whose behavior it seeks to influence. Economists are employed extensively and lucratively in litigation involving areas such as antitrust law and personal injury (where they use human capital theory to estimate lost earnings), but they appear in the same role that physicians and engineers have in medical malpractice and worker safety cases.

The ultimate effect of the economic study of the law that I would hope for is the development of a positive theory of law: a general theory of the determinants of the laws of torts, property, contract, and other branches of the law. That positive theory may be more political than economic, if I may temporarily draw a distinction I shall later deny, but whatever its content, legal scholarship would seek to explain, not just what the law should be, but why it is what it is. Such a positive theory of statute law and judicial decision would render the subject cumulatively *improvable*: each scholar's work would build upon the tested work of his predecessors. Improvability certainly is not a characteristic of the traditional legal literature in which fairness is the primary basis for the evaluation of legal change.

2. *History*

Economists have long and often made use of historical events to illustrate economic theories, as when Adam Smith cited the destruction of spices by the East India Company to maintain their price in England as an example of

monopoly behavior. Economists have often used quantitative methods in these investigations, as when, in 1863, William Stanley Jevons initiated the era of index numbers to measure fluctuations in English price levels. He was measuring the effect of the 1848 gold discoveries in Australia and California, and found that over a 14 year period the discoveries had led to a rise of about 20 percent in English prices—a tiny inflation of 1.3 percent per year, and yet he titled his study, “A Serious Fall in the Value of Gold Ascertained”.

Nevertheless it is commonly hailed as the beginning of a new era when in 1958 Alfred Conrad and John Meyer used capital theory to argue that the view of American slavery as an economically unprofitable institution was mistaken.⁴ Conrad and Meyer made elaborate calculations of the rate of return on slaves, valued at their market prices, and found them equal to ordinary rates of return, about 6 percent. This study invited much additional work, but the conclusion of the viability of the institution of slavery was generally confirmed.⁵

These earlier studies of the economics of slavery were quite overwhelmed, in scope, in boldness of argument, and in violence of criticism encountered, by *Time on the Cross*, the famous work of Robert W. Fogel and Stanley L. Engerman.⁶ Their wide-ranging book had the central theme that slaves were valuable property and therefore were treated with the care that valuable property normally receives (an application of the Coase theorem). The slaves' nutrition, health, and even family integrity were accorded proper care simply out of the economic interests of their owners. The team labor that the use of slaves allowed, moreover, was more productive than the labor of free white workers.

Although the authors emphasized their strong opposition to the institution they were studying, they were attacked sometimes as if their names were Simon and Legree.⁷ That controversy is not over but it has not maintained its pitch of white heat. The episode is most instructive (and depressing) on the difficulty of achieving objective discussion of a scientific problem which has strong emotional and moral associations. It is equally instructive on how a discipline seeks to repel the use of new and complex analytical tools—in this case, economic theory and statistics. The implicit demand of Fogel and Engerman that students of subjects like slavery

⁴ “The Economics of Slavery in the Ante-Bellum South”, *Journal of Political Economy*, April 1958; reprinted with changes in *The Reinterpretation of American Economic History*, ed. by R. Fogel and S. Engerman (N.Y., Harper-Row, 1971).

⁵ Viability must be measured against alternatives, and it is a defect of this literature that it did not test the viability by the alternative of manumission, which was forbidden in the southern states.

⁶ Boston, Little, Brown and Co., 1974.

⁷ One collection of the professional criticism they elicited is *Reckoning with Slavery*, ed. by Paul A. David and others (N.Y., Oxford University Press, 1976).

should master an entirely new set of tools was frightening to traditional historians.

One long run effect of the invasion of history seems to me certain: institutions with large economic roles such as slavery will simply have to be analysed with the tools of economics. In another generation it will be embarrassing to attempt a traditional literary historical treatment of such topics.

A second effect of the “new” economic history is to direct and confine studies in the subject. I take it that the central task of the economic historian is to explain the evolution of economic phenomena—why a nation industrializes or why it slows down in its growth, or why America dominated the age of clipper ships but played no comparable role in the subsequent age of steamships. But the standard economic theory almost always takes the institutions of a time as given, and does not often assist in explaining their changes. The user of economic theory is therefore pressed to study structure, not change. *Time on the Cross* is a cross-sectional study of the institution of slavery, and does not explain the path of its changes over the antebellum decades. Conventional economic history also had no theory of change, so one might say that at least the use of economic theory has not cost anything. But I think that it has cost something: the attention to problems that do not fit within received economic analysis appears to have diminished appreciably. The new economic history is inviting its followers to turn its subject into that branch of industrial organization which uses older data.

3. *Sociology*

Sociology is so wide a field that I shall present two different applications of economics.

Crime. Crime is a calling for some, the combatting of crime is a calling of others, and all of us—even the criminals—must incur costs to minimize the incidence of crime against us. The locks on our doors, the location of our homes, the methods by which we hold valuable assets, are all influenced by crimes of violence or of skill.

I must be brief in this area, so I shall comment only upon one important subject: the use of capital punishment to deter murder. By about 1970 it had become received wisdom that the studies of criminology by sociologists, in particular Thorsten Sellin, had shown that capital punishment did not deter murder. Murders were said to be committed in passion, or for other irrational reasons and hence could not be deterred by prospective penalties, or certainly deterred no more by capital punishment than by long imprisonment. Isaac Ehrlich made sophisticated statistical studies which led to a very different conclusion. A historical study of the data suggested that on

average, for every execution, there were 7 or 8 fewer murders.⁸ A subsequent study based upon cross-state analysis raised the possible pay-off to 20–24 fewer murders per execution.⁹

Since almost everyone except the American public is opposed to capital punishment, these studies encountered violent and passionate resistance. Even many economists, who know beyond peradventure that the higher the price of a thing, the less of it will be demanded, were critical of the Ehrlich findings, not simply with respect to magnitude of the trade-off between capital punishment and the murder rate, but even to the existence of a trade-off. The National Academy of Sciences created a committee of experts to review the literature on the effects of deterrence upon crime rates, with special attention being given to Ehrlich's studies.¹⁰ The committee did not dispute the existence of deterrence from the use of capital punishment, but asked for vastly more detail and sophistication before accepting any definite results as a basis for public policy. This was not the first, nor will it be the last, example of where an unpopular thesis is confronted by the demand for extraordinarily rigorous proof, proof of a level not required for more congenial conclusions.

The Family. As a second and more radical extension of economics into sociology, I take Gary Becker's theory of marriage. Marriage is viewed as a rational act by which the partners seek to maximize their incomes relative to remaining single or choosing different mates. Two results of this approach will give some flavor of it.

Polygyny, the practice of one man having several wives, is shown by Becker to be a practice favorable to increasing the income of women derived from marriage. A man's offer of marriage is implicitly a demand for a wife, and multiple offers increase the demand for women relative to the demand with monogamy. In addition, if men differ greatly in their capacities as husbands, in George Bernard Shaw's words, "the maternal instinct leads a woman to prefer a tenth share of a first class man to the exclusive possession of a third rate one".¹¹ Shaw did not publish the data underlying this judgment, however. This interpretation of polygyny is of course diametrically opposed to the conventional picture of masculine indulgence in unbridled lust.

⁸ "The Deterrent Effect of Capital Punishment: A Question of Life and Death", *American Economic Review*, June 1975.

⁹ I. Ehrlich, "Capital Punishment and Deterrence: Some Further Thoughts and Additional Evidence", *Journal of Political Economy*, August 1977.

¹⁰ A. Blumstein, J. Cohen, and D. Nagin, ed., *Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates* (National Academy of Sciences, 1978). A reply is given by I. Ehrlich and R. Mark, "Fear of Deterrence", *Journal of Legal Studies*, June 1977.

¹¹ Quoted by G. S. Becker, *A Treatise on the Family* (Cambridge, Harvard University Press, 1981), pp. 48–49.

As a second example of Becker's work, consider courtship. It is a received economic theory that the longer you search in a market, the better the prices you will find at which to buy or sell. Similarly, the longer the young adults search the marital market, the more appropriate the pairing that will be achieved: the larger will be the contribution of the marriage to the incomes of the couple. This is strongly confirmed by divorce data: the rate of divorce, either soon or eventual, rapidly declines as the age of marriage rises to the late twenties—thereafter it begins to rise again. People, like most red wines, do not improve after 30 years so far as new marriage is concerned.

These two briefly sketched examples do not begin to hint at the immense fertility of the hypothesis of maximizing behavior in sociology. Becker's book is crowded with fascinating implications.

The proposal to use economic theory systematically and extensively in sociology has been welcomed by a good number, but surely not yet a large number, of sociologists. Becker has been made also a professor of sociology at Chicago by invitation of that distinguished department. Self-interest says that one should wish a larger demand for one's services but many economists have refused to accept this extension as a desirable field for work. Sociologists can explain this reluctance with a sociological explanation; later I shall give an economic explanation.

I predict that economic theory will be used extensively in sociology, particularly to study the behavior of individuals and families under the postulate that they are seeking to maximize their utility. Moreover, the analyses of market competition will be found to carry over into numerous sociological "markets", as it has already been applied to the marriage market.

There remains a large class of social phenomena to which it is not apparent that presently available economic analysis can contribute significantly. The origin and content and strength of nationalism or religious piety are important examples of forces we cannot presently illuminate. It is not clear whether we shall have much to contribute to the study of language or the changes in ethical values, such as the revulsion against slavery in England in the late eighteenth and early nineteenth centuries. In short, economics will become a widely used tool of sociologists. It is an open question whether our apparatus will help in understanding so-called macro-sociological phenomena.

4. *Economics in Politics*

The government has always played a large role in the analyses of economists. Adam Smith's Book IV of the *Wealth of Nations* is an attack upon mercantilist policies achieved, he believed, by the scheming of merchants and manufacturers. Malthus' population theory led him to rejection of the

Poor Law. Ricardo's assault on agricultural protection was followed later by the criticisms by American economists of our protectionism.

If these instances reflected a laissez-faire philosophy, there were also always requests by economists for the state to correct failures in the economy, and these requests rose rapidly in number in this century. The state should correct disharmonies arising out of the failure of individuals to take account of all the consequences of their behavior—the problem of externalities, commonly associated with the name of A. C. Pigou.¹² The state should care for incompetents, and it should reduce the inequality of income. The state should insure full employment as well as reducing its own propensity to create inflation.

Observe that when the state did objectionable things, it was the pawn of special interests, and for a time economists thought this evil would disappear if the right to vote were given widely. When the state was asked to correct externalities or tax progressively, the state was treated as a willing, public-spirited servant. The two views were held by the same economists. This superficial mixture of cynicism and wishfulness had to give way, but it is remarkable how late the movement began.

Economists have brought to the task of explaining economic legislation three different pieces of knowledge:

1. We have a well-developed theory of individual utility maximizing behavior and individual enterprise profit-maximizing behavior.
2. We have a theory of the interaction of individuals or firms in competitive and monopolistic markets.
3. The level of statistical skills of economists is relatively high.

Observe, however, that we lack a good theory of coalition formation. We have some elements of such a theory in explaining cartels and free riders, but they do not take us far in explaining political behavior.

An example will illustrate our strengths and weaknesses. The farm support programs in the United States are now costing us some \$30 to \$50 billion per year. Economists have made important contributions to the understanding of these policies:

1. We have discovered who the primary beneficiaries among the farmers are: they are usually the landowners.
2. We have developed good measures of the effects of the programs on particular products such as sugar, dairy products, and tobacco.
3. We have been able to explain why the farm programs obtain more for farmers, per capita and probably in the aggregate, as the share of the population in farming falls to low levels.
4. We can explain why some programs use output restriction whereas

¹² *The Economics of Welfare* (4th ed., London, Macmillan, 1932).

others use direct subsidies. (Bruce Gardner's work on this problem will be published soon, I hope.)

We are good at tracing and measuring the effects of the farm programs, and in explaining the particular policy instruments that are chosen.

But if you wish to know why the agricultural assistance programs proliferated in the 1930s instead of earlier or later, we are less helpful. In general we have not been effective in explaining which policies will appear and when. I have recently studied the origin of the Sherman Act, which initiated our antitrust policy in 1890, to discover who wished it and why they didn't wish it earlier. Homer frequently had the gods intervene in the affairs of man, and I haven't been able to improve much on Homer with respect to our antitrust policy.

There are probably more economists working on politics than in any of the other areas I have discussed, but our activity has been intensive for less than two decades. Whether this area, which some call "public choice" and others give the good old-fashioned name of "political economy" will become the possession of economists or political scientists cannot be determined, and is not important. There are now a growing number of gifted and well-trained political scientists working on these problems. They are creating tools as well as adapting those of the economists. Political science will not be the same again.

5. *Conclusion*

So economics is an imperial science: it has been aggressive in addressing central problems in a considerable number of neighboring social disciplines, and without any invitations.

The senior members of the economics profession have not been enthusiastic for the extension of their domain. This may be documented by the fact that not one of the leading exponents of these extensions, Coase or Buchanan or Becker—has been elected President of the American Economic Association, although in the past two decades an adequate number of less distinguished economists have been so honored. The selection process is dominated by established senior members of the profession and they have made their attitude clear. I believe that a citation study would show that their disapproval is not shared by the younger economists.

One reason for this scientific conservatism (in the literal sense of preservation of the recent past) is presumably that older scholars wish to protect their specific human capital—the knowledge they possess of their field—and innovations in a discipline tend to make that knowledge incomplete or obsolete. A similar reaction can be observed in the senior economists with respect to a more traditional area of economic theory, that of rational expectations. Schumpeter's view that a science progresses through the dying off of its old professors has some truth.

A second reason for the conservatism is that these extensions of economics have not in general assisted economics in dealing with their traditional economic problems, many of which are far from satisfactorily solved. I believe that, in time, there will be a useful feedback: for example, the theory of marriage is highly relevant to the theory of partnerships. Again, cartel theory will benefit as the theory of coalitions develops.

The more interesting question, however, is the long run impact of the economists upon these neighboring fields. I have already indicated that I believe that economic history, sociology and political science will permanently change. Enough people are employing economic analysis in each field so that the practice must continue and even expand unless the work is unsuccessful. I believe that it has been and will continue to be successful, where success is defined as achieving higher explanatory and predictive power with, than without, economic analysis. That does not mean that the other fields will be taken over by economists. It does mean that training in economic analysis will be essential for some branches of these disciplines.

Law is in a different position. The primary task of the law schools is to train lawyers: law schools are trade schools. Research is permitted and in recent years even encouraged at the better schools, but that research is frosting on the cake of professionalism. If the overwhelmingly normative orientation of legal writing should be redirected to the explanation of legal institution and their evolution, there will be a place for economic analysis in legal scholarship. Until that happens, economists in law schools will be economists working on legal problems, with their main professional base in the economics community.

Why did economics begin its imperialistic age so recently as the last two or three decades? My answer, which I advance with limited confidence, is that the extended application of economic theory was invited by its growing abstractness and generality. The statement of economics began to be abstract and general, and increasingly to use mathematical language, in the 1890s with Marshall, Pareto, Fisher, Edgeworth and others. By 1907 Pareto was saying that an economic problem contained only two ingredients: goals and obstacles to their achievement. Goals (or tastes) and obstacles can be found everywhere. It took two generations for this transformation to be completed: by 1940 the new Ph.Ds at good universities began to be proficient in the viewing and handling of economics as a general analytical machine, the machine of maximizing behavior. The abstraction increased the distance between economic theory and empirical economic phenomena—not without some cost to economics—and made the extensions to other bodies of phenomena easy and natural. If that explanation is correct, there will be no reversal of the imperialism.

Heinrich Gossen, a high priest of the theory of utility-maximizing behavior, compared the scope of that theory to Copernicus' theory of the move-

ments of the heavenly bodies. Heavenly bodies are better behaved than human bodies, but it is conceivable that his fantasy will be approached through the spread of the economists' theory of behavior to the entire domain of the social sciences.