

A FRAMEWORK FOR UNDERSTANDING
SOCIAL PHENOMENA

by

Jan-Evert Nilsson
Department of Business Administration
University of Umeå
S-901 87 Umeå
Sweden

A B S T R A C T

In this report we discuss our possibilities to attain insight about social phenomena. In the first part of the report we argue the nature of social phenomena is different from natural phenomena. Therefore there is a danger connected with the fact that social science for so long time has been dominated by techniques and goals which were successfully developed for the purpose of natural science.

In the second part of the report we identify and discuss four essential problems in the study of social phenomena. The problems are: (a) the definition problem, (b) the issue of limitation, (c) the problem of causality and (d) the problem of stability.

In the last part of the report we discuss in what way social phenomena can be understood. Six conditions for a successful paradigm in social science are presented and we can conclude that used in a proper way System Dynamics can be one paradigm that fulfill these conditions.

T A B L E O F C O N T E N T S

	Page
I. INTRODUCTION	311
II. THE COMPLEXITY OF SOCIAL PHENOMENA	311
III. PROBLEMS IN THE STUDY OF SOCIAL PHENOMENA	312
A. The definition of social problems	312
B. The issue of limitation	314
C. The problem of causality	315
D. The problem of stability	322
IV. HOW CAN SOCIAL PHENOMENA BE UNDERSTOOD?	326
V. CONCLUSION	331
BIBLIOGRAPHY	332

I. INTRODUCTION

One of the basic principles of science is that an unlimited number of phenomena can be reduced to a limited number of concepts and structures. In natural science substantial progress has been made in the identification of these structures. Laws derived from empirical evidence have contributed to an increase in man's understanding of nature. With the achievements of natural science as a background social sciences have naturally sought to identify "laws" governing the development of society. Social policy-makers have hoped that the progress of social sciences would increase the possibilities for man to adapt to the identified laws. Such an adaptation would thereby increase our control of society. However, the social sciences have only partially succeeded, with the result that many critics consider these sciences underdeveloped.

This paper attempts to explain the limited success of the social sciences, when regarded from the perspective of natural sciences, in terms of the nature of social phenomena. The social sciences have for too long been dominated by techniques and goals which were successfully developed for the purpose of natural science. This ambition to imitate natural science in its method rather than its spirit "... has contributed scarcely anything to our understanding of social phenomena".¹⁾ But social phenomena differ essentially from natural phenomena, and consequently other approaches must be chosen for sciences dealing with them.

II. THE COMPLEXITY OF SOCIAL PHENOMENA

The basic differences in the two types of science can be attributed to the fundamental essence of man. In the final analysis, the social sciences must deal with human behaviour, which is not ruled by a few laws subject to ready identification. Instead, human activity is the product of a great com-

1) von Hayek (1942) p 268.

plexity of factors. Living conditions, personal experiences, attitudes, the institutional framework - these factors are typical of those that condition human behavior. Social processes are characterized by the participants, at least to a certain extent, being free and conscious beings, while participants in natural processes are objects and organisms without freedom.

A central feature of social processes is the ability of participants to learn. Human activities are largely a consequence of previous experiences, that is, an historical process. At the same time, any given act also influences all future acts. Immediately upon its realization, an act becomes an historical experience which, together with others, will influence future acts. This influence can be regarded as a consequence of the cumulative character of experiences. As a result, and contrary to natural science, it is not possible in the social sciences to isolate and repeat social processes under controlled conditions. With each repetition, the content of past and present changes, and so do the conditions of the process.

Understanding social phenomena is equivalent to understanding human behavior in different types of situations. The investigator must have knowledge of the process of learning of individuals and groups - what they experience, from what objects the experiences have been obtained, at what time, and what conclusions have been drawn from them. Furthermore, since re-evaluations of previous experiences in the light of new experiences often play an important role in the acts of individuals, the reactions of individuals in present time can be explained from a complex set of factors in past time. This generalization differs from natural science where reactions only occur in response to external stimuli. The ability of human beings to delay their reactions, together with their inability to assert exactly where in the past the determinants of a certain behavior are to be found, gives a complex nature to social phenomena.

III. PROBLEMS IN THE STUDY OF SOCIAL PHENOMENA

A. The definition of social problems

Difficulties in the analysis of social phenomena appear even at the

fronted with a problem, just of some symptoms. Therefore an objective knowledge of what the problem is, or even if there is a problem is seldom possible. Instead the definition of the problem will, to a large extent, be molded by the individual scientist's conception of reality, which in turn is dependent on the scientist's values and the used methodology. The conception of reality cannot be expected to be based on scientific conceptions alone. Together with Bertrand Russell, we might point out that the conception of reality, even for the most rational scientist, can be compared to "... a stormy ocean of passionate convictions based on desire, upon which float perilously a few tiny boats carrying a cargo of scientifically tested beliefs".¹

The influence of "passionate convictions" means that the number of perspectives on a social phenomenon will vary according to the number of scientists bringing their attention to bear on the phenomenon. The values and the methodology give the problem definition the a priori feature which characterizes each perspective. In this context, as expressed by Gunnar Myrdal, it must be the task of research to confront this a priori feature with facts, and then adapt the a priori assumptions to the facts instead of the other way around. However, this procedure is not possible with the basic a priori of social research - that is in actual problem definition. A given definition of a problem cannot be evaluated through a confrontation with facts, since facts do not organize themselves, but can only be organized in relation to specific questions - that is in the definition of a problem. To evaluate a given problem from facts organized with respect to that same problem can hardly be looked upon as a way to eliminate the a priori feature governing the definition of problems. Instead the lack of clearly defined problems in social research implies that the choice of problems to be studied arises mainly from the scientist's own conception of reality. Different approaches, which represent different basic assumptions, follow from different conceptions of reality. As a consequence comparisons between research results from studies founded upon different basic assumptions cannot be expressed in terms of right or wrong. In the social sciences, no one can ever claim to have found the Absolute Truth; research is limited to simply giving different perspectives on the true nature of a given phenomenon.

1) Russell (1962) p. 16.

2) Myrdal (1973) ch. 7.

B. The issue of limitation

One consequence of the complexity of social phenomena is that the scientist can seldom determine necessary and sufficient conditions for the appearance of a certain phenomenon. Instead, he must concentrate on what is usually described as the most important, the primary or the central causes. Thereby, the separation of factors which must be involved in the analysis from those which are marginal becomes a central issue.

An element which has often influenced this separation of factors is the scientist's connections to a particular discipline. In general social scientists have tended to overrate the importance of factors relevant to their respective fields. Some have even argued that this discrimination is a rational way to achieve the desired separation of factors. The economist, for example, should study economic variables and their interrelationships, and when he has found "... relation between two phenomena, our problem is solved if the one which plays the 'causal' role is non-economic. We have then accomplished what we, as economists, are capable of in the case in question".¹) The outcome of this approach is that the problem tends to be passed on like a baton among the different disciplines, when each has its own particular part of the problem. But such a process is unrealistic, especially considering that the approach is not given a priori logical but is instead the choice of the individual scientist. Under such circumstances, the study of a problem in its original form will not be carried forward by other disciplines. Furthermore an analysis involving only one type of factor is not certain to contribute to an increase in understanding of the phenomenon studied. The world "... to its discredit does not divide neatly along the lines that separates specialists. These lines were drawn in the first instances by deans, department chairmen or academic committees. They were meant to provide guidance in appointing professors, establishing courses and supporting research".²) To study reality from the point of view of solely one type of factor is like trying to apply the organization of the academic world to reality - a task of dubious value. Instead, scientist should start with the defined problem and, by working from that point, discuss the potential relevancy of factors. Any instrument of measure used to draw the line of separation between the phenomenon and the totality to which

1) Schumpeter (1969) p. 4-5.

2) Galbraith (1967) p. 403.

it belongs will be more or less relevant, according to how well it serves the problem definition. By necessity, every social study will necessarily take on an interdisciplinary character. Furthermore because of man's ability to learn, with its resultant long and dynamic delays between cause and effect, social phenomena must be studied in an historical perspective, where the relevant time period will be conditioned by the phenomena themselves.

C. The problem of causality

A prerequisite for identifying the relations of causality is that the factors involved in a system must, in some way, be connected to each other. If, however, the connection is so loose that the probability that a factor will influence another given factor is as great as the probability that it will influence every other factor, then the condition is one of chaos or total randomness. Under such circumstances, it is meaningless to talk of causality. Accordingly we will suppose that social reality is characterized by a certain degree of order. Thereby, at least theoretically, it becomes possible to identify connections among different factors. Essentially, three main types of connections can be identified: (1) one-way linkage, (2) mutual interaction, (3) feedback loop.

The first type of linkage between factors, the type to which most attention traditionally has been paid, is the direct cause and effect sequence - the one-way linkage



Fig. 1. One-way linkage

Figure 1 shows the two types included under one-way causal linkage: (a) efficient causes and (b) historical causes.¹⁾

Efficient causes are such that the cause of the phenomenon under study is closely connected in time to the phenomenon. In general, causes and effects, under this heading, are conceived as simultaneous. cross-sectional

1) Buckley (1967) p. 68.

analysis is an example of analysis where such conditions are often presupposed.

Historical causes, of course, presuppose an historical approach. This type of cause considers that the causes of a phenomenon may have developed, and even changed character, over a long period of time. Let X be the colonial empires in Asia. Gunnar Myrdal maintains that "the imperial powers themselves had created an educated class to provide administrative and professional services in the colonies".¹⁾ (c) During the period between the wars, the size of that class grew at the same time that the colonial powers shared out more of the power: "When welfare became a concern of the policymakers the indigenous elite were called on to assume more responsibility for their own people".²⁾ (b) As the size of this elite grew, so also did the pressure on the colonial powers to share out more and more important posts. By implication, through the elite educated in Europe, the ideals of Western Europe found a foothold in the colonies. These ideals of freedom, justice and equality, which were alien to the prevailing local situation, inculcated new perspectives. Accordingly, the elite made use of these "... concepts to give political definition to the new nationalism, and they directed the liberation movements that emerged as a result". (a)³⁾

This example shows that historical analysis is more dynamic than efficient causes. However, within social research, partly because increased use of quantitative methodologies, the attention paid to the historical approach has decreased with time. One standardized method of social research can be described as the attempt to assert relations between two, or sometimes more, factors with the help of statistics. The purpose is ostensibly to determine the efficient causes. The uncritical use of this method, characteristic of a great part of social research, can be challenged on several points. First, the method rests on the assumption that the causes of a social phenomenon disappear with the appearance of the phenomenon. In actual fact, social reality is characterized by the preceding cause continuing to operate and even modifying its own effect. The cause of a phenomenon (a) is, in itself, a phenomenon (b) caused by other phenomena (c), among which (a) may be pre-

1) Myrdal (1968)
2) Ibid p. 135
3) Ibid

sent. Therefore, in most cases, the one-way causal linkage assumption is an inappropriate simplification of a complex social reality. In the second place, traditional statistical methods cannot yield knowledge about a structure of which the studied relations is only a part, and whose reproduction is a prerequisite for understanding the phenomenon. In the third place, measuring that which is supposed to be measured, according to the stated hypothesis is possible only in exceptional cases. That which should be measured is replaced by that which can be measured. The difference between the theoretical concept and the statistical concept at hand can never be perfectly isolated. The issue becomes a question of metaphysical speculation. Whether, under these circumstances, a statistical relation between a stochastic variable and the studied phenomenon can be interpreted in terms of causality between the theoretical variable and the phenomenon remains uncertain. In any case a statistical relation can never be sufficient evidence of causality between two variables.

Such study of complex phenomena by means of cause and effect models yields knowledge which is obtained fragmentarily, and which describes relations between specific variables themselves, in turn only part of a large pattern. The fact that these fragments of knowledge can only in exceptional cases be combined into a meaningful totality makes such studies even more questionable. Therefore, only in special cases can the simple cause and effect sequence contribute to our knowledge of social processes. The conclusion must be that, as a starting point, the simple sequence can be of some help, but it must be combined with other methods which allow better attention to be paid to the true complexity of the processes under study.

A second type of relation between factors can be described as mutual interaction. The interest in this type of relation can be seen in part as a reaction against the shortcomings of the simple cause and effect chain. Moreover, the reaction can be credited to the large number of relations of the mutual type thought to be characteristic of the natural world. The reaction was also reinforced by the achievements of mathematics in describing such relations. In social sciences, economics was the first field where mutual relations were taken as a starting point for the structure of theories.

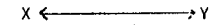


Fig. 2. Mutual interaction

This perspective has, at least in one respect, helped to increase our understanding of social phenomena. Here, phenomena are not seen, as in the case of the cause and effect chain, as the outcome of one or more causes acting at a given time. Instead, the phenomena are seen as a result of interactions between factors which are both causes and effects. This aspect is essential. Because, we must keep in mind the propensity of human beings to be ruled by experience, at the same time as their experiences are enriched precisely through acting.

Being connected, in an almost mechanical way, with the assumption of equilibrium is one basic weakness of this type of cause and effect relationship. The belief in equilibrium, or in the continual striving of forces toward that state, has become central to social researchers. In its most simple form, this assumption implies that a system will react to every disturbance in such a way as to restore equilibrium. Furthermore, the movement and counter-movement caused by a disturbance will presumably take place during the same period of time. The relations among factors are therefore independent of time. Consequently, the factors cannot assimilate the experiences which automatically result in future time becoming present and present becoming past. Economists' description of markets, exemplified below by the firm's demand for labor power, is a classic example of theory governed by mutual interactions:

"If the product of a certain industry can be sold for more than the value of the labor it contains, additional labor will transfer into that industry from other occupations. Supply will expand until the prices are brought down to the value of the labor it contained. Similarly, if a commodity sells for less than the worth of its labor, labor will move into other lines until the gap is closed. The tendency of wages toward equality within a country results in prices equal to their labor such as to equalize the return to labor in all occupations and regions."¹⁾

1) Kindleberger (1968) p. 19-20.

In the preceding example, cost of labor and price of goods are the two mutually interacting variables. Between the two an immediate process of adaptation operates until the variables reach the same value - in other words, the sought after equilibrium. Together, cost of labor and price, plus the relations between them, constitute a closed system, which is attractive from a strictly theoretical point of view.

When related to social reality, however, the principle of mutual interaction exhibits significant shortcomings. In the first place, the relation between the variables is mechanical in that it leaves no room for learning. The relation is therefore based on a mechanical view of man, a view that considers human reactions as related solely to external stimuli. In the second place, the relation between the variables is independent of time, in that the analysis does not take time into account. The adaptation among the variables is seen as instantaneous and the relation is viewed as valid independently of time scale. In the third place, the validity of the assumption of a closed system with no external influence can be questioned. In mutual interactions of a timeless character, external forces tend to upset the established equilibrium, but the "mutual interaction" relation allows for no force that is capable of upsetting the structure itself and thereby the premises of the analysis. In the fourth place, all interacting variables are assumed to be of equal importance. The analysis does not permit one or several variables to be regarded as central variables. Even if most social scientists could accept the idea that social phenomena are explained by mutual interactions among factors rather than individual causes, hardly anyone would accept the idea that all factors are of equal importance.¹⁾

From the basis of these critical points of view, Maclver seems reasonable when he argues that this type of analysis is a "... fine instrument for expressing the calculable elemental attributes of physical mechanics, but it is futile to seek to apply it to the processes, trends and happenings of the complex time-bound constructs within which we have our being".²⁾

1) cf Bunge (1959) p. 157.

2) Maclver (1964) p. 52.

The third type of cause and effect relations is the feedback loop. Figure 3 shows resemblances between this type and mutual interactions.

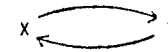


Fig. 3. Feedback loop

However, the two types of relations differ in two basic respects. First, in the feedback relation, it is not necessary to assume that the initial change and the resulting change take place during the same time period. Second, the reaction needs not in all situations be seen as an attempt to restore equilibrium. Instead, the reaction may reinforce a development away from equilibrium. In such a case, this type of circular cause and effect relation creates a cumulative process which cannot be connected to the existence of a certain equilibrium. Gunnar Myrdal's theory of regional development can be given as an example of such a process.

"The decision to locate an industry in a particular community, for instance, gives a spur to its general development. Opportunities of employment and higher incomes are provided for those unemployed before or employes in a less remunerative way. Local business can flourish as the demand for their products and services increases. Labour, capital and enterprise are attracted from outside to exploit the expanding opportunities. The establishment of a new business or the enlargement of an old one widens the market for others, as does generally the increase of incomes and demand. Rising profits increase savings, but at the same time investments go up still more, which again pushes up the demand and the level of profits. And the expansion process creates external economies favourable for sustaining its continuation."¹⁾

The feedback loop structure can take into consideration the effect of learning, since the reaction to a certain 'cause' may appear at a later period of time. To introduce a time dimension into this type of relation connotes that the studied phenomenon takes place in a specific time context. Therefore, with a feedback analysis, the phenomenon under study may be defined in both a time and a space dimension, just as in analyses of historical causes.

1) Myrdal (1964) p. 25.

In conclusion for the study of causality in social sciences, all three types of relations presented here are, depending on the attributes of the phenomenon, useful. But neither the one-way causal linkage sequence (mainly the efficient causes) nor the mutual interaction relation can take into account man's ability to change his behavior in a certain situation. Instead these two types presume on unequivocal relationship between the character of the situation and man's behavior.

Man's ability to act consciously is accounted for only in analyses which accept the existence of historical causes or feedback relations. Therefore, where learning is relevant, the analyses must start from one of these two types of relations. Moreover, if the study intends to increase the understanding of a dynamic behavior of a social phenomena, and not just occasional happenings, the feedback system (consisting of several feedback loops) is in general most appropriate. Because "in complex system cause and effect are often not closely related in either time or space. The structure of a complex system is not a simple feedback loop where one system state dominates the behavior. The complex system has a multiplicity of interacting feedback loops".¹⁾

The complexity of social phenomena suggests that it can never be sufficient to analyse these phenomena solely in terms of the factors causing the given phenomena, the possible effects of these factors, and/or the mutual interactions among the factors. The conclusion is that the simple cause-and-effect types of explanation are inadequate to discuss most forms of social phenomenon. To understand the complexity of social phenomenon, they must be seen as the consequences of positive and negative feedback loops, in which the acts of individuals, groups and organizations are examined. These acts cannot be considered a priori as mechanical or unequivocally related to a certain type of situation. Instead, to some extent, they reflect man's ability to learn. Complex social phenomena can therefore never be completely understood by working from oversimplified, although theoretically attractive approaches.

1) Forrester (1969) p. 9.

D. The problem of stability

Research in the social sciences generally starts from present reality and/or past reality. The knowledge (insight) generated is therefore related to a time period that has been defined. To what extent generalizations can be made in time - that is, to what extent the stability of the phenomena under study can be maintained - is therefore a central issue.

Over a long period of time, the inheritance of natural science helped to maintain, when seen in a time perspective, the believe in the existence of a universal knowledge. In this view, the object of social science is to discover the universal laws which govern social phenomena. If only these laws can be identified, then the necessary premises for the establishment of an unequivocal relation between past, present and future can be obtained.¹⁾ In its purest form, this approach implies that, from a given state at a given time, a unique set of states will arise at a determined point in time. Even after the identification of laws, therefore, society can "neither clear by bold leaps nor remove by legal enactments the obstacles offered by the successive phases of its normal development".²⁾ According to this deterministic view on social reality, social research can yield knowledge as universal as that obtained in natural science.

To some extent, the belief in an unequivocal logic between the present and the future contradicts what was said earlier about man's ability to act consciously. A deterministic approach is incompatible with the idea that human beings, through the fact of consciousness, can influence the relation between past and present. Instead, to underline this possibility is to make the freedom of the individual a central issue. This freedom implies that people can conceive the possibility of a form of development different from today's, and which is the product of all our future actions. The power to influence is also the power to create what does not yet exist, and in this way to realize the freedom of man. However, the freedom of man need not be total, but can be limited by the existence of certain events and states in the present. According to this pragmatic view, the present is an important link between the past and the future. Yet, the link is not sufficiently

1) cf. Comte (1959) p. 79.

2) Marx (1906) Authors preface.

of departure. Instead, this understanding must be related to a given purpose, with the implication that, from different purposes, different explanations of the same phenomenon can be obtained.

The point here is that the overall purpose of social research must be related to man's ability to act consciously. Since all human action is related to the future, social research should attempt to anticipate possible courses of future development, and to thereby increase the chances for mankind to adapt to or even direct development so that we are no longer passive prisoners of the forces of nature. While man in his relation to nature can be looked upon as inferior and is forced to adapt to its laws, he is, however, seen as equal of society. Society is, after all, the construction of human beings who therefore can direct its development.

If development can be directed and if problems are not given a priori, then the manner in which the values of scientists affect the study of social phenomena becomes more evident. Restrictions rooted in the values held and the paradigm used by the scientist influence the choice of problem definition, which in turn affects the type of insight that the study can give.¹⁾ Consequently, knowledge about social phenomena can never be absolute in the sense that Absolute Truth can exist in social science. Knowledge must be related to the basic a prioris, concerning values and paradigm, which lie behind a study. Therefore, the understanding of social phenomena can only be evaluated within the framework of a given perspective. By implication, a discussion of the validity or the fallacy of a given concept is relevant only to the set of studies which use a similar perspective. The consequence is that social research, instead of presenting the Absolute Truth, presents different perspectives on a given phenomenon; neither 'true' nor 'false' are meaningful concepts for evaluating the different perspectives. Social science displays a pluralism of research, where varying proposed measures will be the criteria for deciding the choice of a dominant perspective, and the perspective chosen will appear as the gauge of established truth.

1) David Anderson gives in his contribution to this volume a good example of the relation between the used paradigm and the result.

Social reality is also characterized by the absence of any given natural system. Instead, every system is a scientific construction where the chosen problem definition delineates and bounds the system. This delineation contains an element of arbitrariness since, in some ways, everything in reality is interrelated. Therefore, any delineated system can represent only one of many meaningful structures, which, in the perspective of a chosen definition, contain all the relevant variables. Being able to separate the more or less relevant variables becomes, under these circumstances, a prerequisite for understanding social phenomena.

The task of social research is to delineate a system and reproduce in a model a structure which can empirically identify this system. This model must not be evaluated only on the basis of its capacity for reproducing given behavior, but even more importantly in terms of the isomorphism between the structure of the model and the structure of reality. By implication, then, the concepts and the relations of the model must have empirical relevancy.¹⁾ In the ideal case, the conformity between the model and the represented reality would be total. But such an ideal case will probably remain unattainable. In a complex reality, it is not possible to identify all the relevant variables and their internal relations for the study of a phenomena. Furthermore, social scientists will never be able to identify constants which are timeless and universally valid, such as the speed of light. A system of equations, which mainly describes the form of the relations between the entering variables, but where the exact value of the coefficients cannot be asserted, is the most exact representation of social phenomena that can be obtained. Therefore, predictions of future consequences of present social processes can never be predictions of particular events at a given point in time.

The understanding of social phenomena must be identical with the understanding of social processes. States, or differences in states, are a type of phenomena which can only be described but not understood - in the meaning of having insight about the causes. Understanding must be related to processes, to something that undergoes change. The question is whether this change follows a fixed pattern within a closed system, with everlasting repetitions and circular movements, or an open process with a progressive or regressive character.

1) cf. Forrester (1961) p. 63.

The character of social process permits us to talk of two types of analyses: the instrumental and the institutional. The purpose of instrumental analysis is to give a logically consistent description of the processes that create a given characteristic phenomenon. The description is not related to a defined time period. The models used for this type of analysis represent closed systems, whose fixed development patterns are a consequence only of forces working within the given system. These models provide an instrument for understanding, working from given premises, the underlying cause to a given phenomenon. Meadows' model of commodity production-cycles¹⁾ and Mass' model of business cycles²⁾ can be mentioned as examples of instrumental analyses.

On the other hand, the purpose of institutional analysis is to describe an actual course of events by examining, within a specific time context, the factors upon which the acts of different participants are based. The purpose of such a causal analysis is to reconstruct, within a context of time and space, an actual course of events. This type of analysis presupposes the possibilities of continual revision to the limits of the system, since every social happening alters its character over time and the basic assumption behind the initial delimitation of the system is thereby influenced. The world models can be mentioned as, examples of institutional analyses.³⁾

The result of institutional analysis and the premises of instrumental analysis may coincide in a formal sense, but are unlikely to do so in reality. Both types of analysis are based on a simplification of their respective realities, which can never completely coincide with each other. Instrumental analysis is a rationalization of the theory that lies at the basis of the action of individuals. In other words, the analysis underlines the individual's way of defining his own problems. On the other hand, institutional analysis is an attempt to identify the forces which condition an event while in progress, and to understand the total process which continuously alters the prerequisites not only of the principles which underlie the theory of the individual but also the principles themselves.

1) Meadows (1970)

2) Mass (1975).

3) Forrester (1970); Meadows et al (1972).

The two types of analysis can, in many respects, be regarded as complementary to one another. The premises of instrumental analysis can operate as the theoretical departure point for institutional analysis. However, it is never enough to construct and explain abstract instrumental models; it is at least as important to show how these models, within the framework of institutional analysis, help to increase our understanding of historical development. The emphasis in social sciences should be on institutional analysis, since only through such an analysis can the understanding necessary to direct the development of society - which is the purpose of social research - be obtained.

As pointed out earlier social research does not deal with relations between things alone, but with relations between things and people or between people alone. The central role of man means that the future can be seen as a realm of possibility, which is not unequivocally related to the present. However, dynamic conservatism manifests itself in human beings often behaving as things. Under these circumstances the possibility of man to direct the social development is more formal than real. A social science, for which understanding means increasing man's possibility of direct development, must strive to separate the future from the present to a greater extent. Thereby, he may be able to create the prerequisites necessary for adaptation of future development to the values of society, and not vice versa. The understanding acquired from the study of social phenomena should help us visualise today the possibilities that lie in the future, and thereby to reduce the role of dynamic conservatism. The images of the future presented by such research should not be seen as scientific predictions in the traditional sense, but simply as attempts to project, for the present, possible future problems. In this way, the understanding of social phenomena which is obtained can help speed up man's learning processes - which means the establishment of new theories and/or abandon old theories - and, as a result, improve the conditions necessary for man to act as a conscious being. This can be done because social research is a part of a social context. Thus, the result of the institutional analysis can lead some new ideas circulating in the society.¹⁾ When new ideas are circulating, the world is no longer the same, for the cultural matrix will have changed and

1) Without exaggeration you can say that the world-models had this effect.

make the same social structure look different. But of course, the steps from thought to action to institutionalisation are long, painful, and perhaps may never be taken.

V. CONCLUSION

From the discussion in this paper we can conclude the following conditions for a successful paradigm in social science.

1. Social research can never be valuefree, which means that it is just naive to strive for objectivity. Instead the researcher must try to express his values explicitly.
2. Social research must start from different social problems. Because it is not possible to talk about strictly economic or sociological problems the research must be interdisciplinary (holistic).
3. It is not enough, when we discuss most forms of human behavior, to search for simple cause - and - effect types of explanations. Instead we must search for causal structures consisting of feedback loops.
4. We can never attain insight about states or differences in states. They can just be described. Therefore understanding social phenomena must be related to the dynamic behavior of the phenomena.
5. The models expressing the causal structure, must consist of concepts and relations that can be found in reality.
6. The aim of social research is not to make predictions about what will happen in the future. Instead we must accept that the future is the domain of action. Therefore social science must be policy oriented, so that man will be able to master himself as he now masters nature.

Used in a proper way System Dynamics can be one paradigm that fulfill these conditions.

BIBLIOGRAPHY

- Buckley Walter Sociology an Modern Systems Theory (Englewood Cliffs; Prentice-Hall Inc. 1967)
- Bunge Mario Causality. The Place of the Causal Principle in Modern Science (Cambridge Mass; Harvard University Press 1959)
- Comte August "The Positive Philosophy and the Study of Society" in Patrick Gardiner (ed) Theories of History (London; The Free Press 1959)
- Hainer Raymond M "Rationalism, Pragmatism and Existentialism: Perceived but Undiscovered Multicultural Problems" in Evelyn Glatt; Maynard W. Shelly (eds) The Research Society (New York; Gordon and Breach Science Publisher 1968)
- von Hayek Friedrich A "Scientism and the Study of Society" Economica vol IX (1942) Nr 33, p. 267-291
- Forrester Jay W Industrial Dynamics (Cambridge Mass; MIT Press 1961)
- Forrester Jay W Urban Dynamics (Cambridge Mass; MIT Press 1969)
- Forester Jay W World Dynamics (Cambridge Mass; Wright-Allen Press 1970)
- Kindleberger Charles M International Economics (Homewood Ill; Richard D Irvin Inc 1968)
- Maciver Robert M Social Causation (New York; Ginn 1942)
- Marx Karl Capital; A Critique of Political Economy (Chicago; Charles H Kerr and Co 1906)
- Mass Nathaniel J Economic Cyles; An Analysis of Underlying Causes (Cambridge Mass; Wright-Allen Press 1975)

Meadows Dennis L Dynamics of Commodity Production Cycles (Cambridge Mass; Wright-Allen Press 1970)

Meadows Donnelia H et al The Limits to Growth (New York; Universe Books 1972)

Myrdal Gunnar Economic Theory and Underdeveloped Regions (London; Methuen & Co 1964)

Myrdal Gunnar Beyond the Welfare State (New York; Bantam Books 1967)

Myrdal Gunnar Asian Drama (New York; Pantheon Books 1968)

Myrdal Gunnar Critical Essays on Economics (New York; Pantheon Books 1973)

Russel Bertrand The Scientific Outlook (London; Allen and Unwin 1962)

Schon Donald Beyond the Stable State (London; Temple Smith 1971)

Schumpeter Joseph A The Theory of Economic Development (London; Oxford University Press 1969)