The Interest of Sociology - Control or Emancipation
THE INTEREST OF SOCIOLOGY - CONTROL OR EMANCIPATION

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ABSTRACT

The thesis is basically an examination of the ideological character of sociology. The acceptance of the problem of order as the problem for sociology and of its concomitant metaphysic of externality and constraint both lead to and reflect an interest in control and domination. The positivistic conception of knowledge which tends to justify this problem and its metaphysic views knowledge as the mirroring of a machine-like world order. This view precludes, a priori, any conception of the possible role of human activity in the creation of history or in the activity of perception itself. Commensurate with this view is the divorce of ethical or value considerations from the acquisition of knowledge.

In this lies the ideological character of sociology and science. It attempts to argue that all conditions and events are "natural". The development of this mechanistic world-view was linked to concerns for expansion and domination. This view enabled the development of means for the control of nature and also made the claim that its tenets are metaphysically and politically neutral, thus denying its roots in an interest in domination. This view embodies the "logic of domination".

The inherent relation between knowledge and interest,
revealed in this analysis, however, points to the possibility of a different conception of knowledge, taking into account the nature of human activity and cognition, which is related to an "emancipatory" interest. Sociological inquiry which does not embody the logic of domination is also possible.
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INTRODUCTION

In the years since C. Wright Mills published *The Sociological Imagination* (1959) a growing body of literature has been produced concerning itself with such related topics as academic value-neutrality, the political roots and connections of scientific research, and reflexive sociology. Mills argued for and stated the need for enlightened ethical and political commitment in the conduct of sociological inquiry. Very few of his successors have come up to the level of his analysis, let alone gone beyond it. Of those who have, almost none are North American.

Mills' successors seem to have been caught in the trap of North American academic sociology in which the parameters of discussion are set by the ghost of Talcott Parsons. The repetition of attacks on functionalism and pluralism, although necessary, is not enough to come up to the critical standards of "the political task of the social scientist who accepts the ideals of freedom and reason." (Mills 1961: 185) The tradition of European sociology, although its political auspices are in many ways equally suspect, has at least not been encumbered by such parameters.

Empiricist and rationalist aspects of European thought have been imported into American theoretical sociology to
make it up almost in its entirety. Europe has had, however, other more critical traditions. The major initial influences on my perspective for the thesis are Alan Dawe, Leszek Kolakowski and Jürgen Habermas. Dawe addresses himself to those aspects of European and American sociology which constitute a basic world-view which precludes any conception of the commitment which Mills mentions. Kolakowski addresses himself essentially to the epistemology, positivism, which has been worked out in justification of that world-view. Habermas addresses himself to the very issue of the relatedness of world-views, epistemologies and political commitments.

The world-view which Dawe mentions is the metaphysic of externality and constraint. Early sociologists defined their problem as the problem of order and set out, after a period of political upheaval in Europe, to argue for the necessity of control and stability. Dawe argues that Durkheim, Weber and Parsons have such a world-view. These writers view the social simply as a constraint. I have added Alfred Schutz to this group in order not to leave out the "loyal opposition" in American sociology.

Wide differences between these four authors notwithstanding, I have stressed continuities in what I believe to be an underlying metaphysic in their theoretical perspectives. In one way or another all four ground their theoretical framework in notions of the inherent worth of science, scientific method, externality, constraint, order, stability, rationality, and social approval. The ground for these notions
is the definition of the problem of sociology as the problem of order. The methods developed for sociological analysis, furthermore, no matter how rigorous they may have become, all rest on this theoretical perspective.

The second chapter addresses itself to this methodology and the philosophy of science which justifies this sort of methodology. The methodologists examined are George Lundberg, Paul Lazarsfeld, and Scott Greer, and the philosopher of science is Karl Popper. The methodological work of Lundberg, Lazarsfeld and Greer is seen to rest ultimately on a notion of practicality or utility. They do not want to argue for a specific method on the grounds that it aids in the attainment of such and such a specific goal because then they would have to argue for the desirability of that goal. They argue that scientific method is practical period. The control and predictability which are argued for by these three writers are grounded in the metaphysic of externality and constraint. By viewing the universe as a machine it is seen as essentially predictable. To the extent that this view is institutionalized and accepted, however, it on that account becomes like a machine. The methodological argument that what is, is so in essence, apart from human action, is thus ideological.

The interest in control exhibited by scientific research can now be viewed more clearly. Lundberg views our era as a beaurocratic one and is anxious for science to follow suit. Lazarsfeld wants to name and measure the aspects of social phenomena which interest administrators, such as the "cohesive-
ness" of tank platoons or the "roles" of factory foremen. Greer wants to argue that we have an advanced culture which has developed a mechanistic science and hence this science and its method should be used to disclose the "mechanisms" of modern society. All three, in the final analysis, argue for the autonomy of "fact". Only certified observers may tell us what we should see and what we see exists, apart from our actions, in a totally external world. Greer argues that it is scientific interest which discloses "hard" facts. Discussions of the purpose of this investigation, however, do not go much beyond stating that it is practical.

As philosopher of science, Karl Popper attempts to justify the metaphysic of externality and constraint as an approach to knowledge. Popper attempts to avoid crude psychologism in his argument, i.e., he does not want to assert simply that sense data stemming from an external world form appropriate images in our "minds". He states clearly that he believes all perceived facts to be conceived with reference to a conceptual framework. With this in mind he distinguishes between the origin and the validity of statements or ideas. In emphasizing validity, Popper emphasizes the testing of statements as opposed to their auspices or origin. The facts with which such ideas are tested, however, are also conceived with reference to a conceptual framework. This constitutes the fundamental contradiction in Popper's theory of science.

The grounds for this error are also clear. The regul-
arity and externality which Popper attributes to the world are seen as discernable by a science concerned with serving institutions which enhance the stability of society by fulfilling their "prima facie" social function. The certainty and predictability with which such writers concern themselves turn out, in the end, to serve an interest in control and domination. When knowledge is viewed as a picture of an unchanging machine-like world the very concern for and purpose of that knowledge is hidden. The controlled observation which is the cornerstone of scientific method is control for specific purposes. We can now see the control involved in seeing the external world as controlling. A way of seeing the world contains in itself a notion of the purpose of activity in that world.

The third chapter begins with a development of the phenomenological approach to knowledge to the extent where a critique of the positivist approach can be made. The alternative is implicit in this critique. Through the notions of natural standpoint, life-world, intentionality and intersubjectivity the point is argued that a knowledge of the world, our world, involves an awareness of the fashion in which that world is constituted. Worlds are simultaneously disclosed and constituted. This is done intersubjectively. Neither solipsism nor physiologism are adequate.

The intersubjective constitution of a world is accomplished historically. The main import of Husserl's phenomenology for the argument here is contained in his last
According to Husserl, science - modern science, Galilean as well as post-Galilean - originates in the Greek idea of knowledge and truth and comes to rest in a scientific rationality in which truth and validity contain in themselves illusion and repression. (Marcuse 1974: 225)

The substantiation of this statement requires both historical and philosophical investigation. Husserl, Jakob Klein and Hans-Georg Gadamer concur about the ideological nature of a positivistic, mechanistic world-view. A segment of reality was accounted for in this view but the view itself depends on a claim to absoluteness. The change from viewing a world as containing objects of varying qualities to viewing one as simply stuff has an effect on the organization of our experience in our world and is based on the intent and purpose of certain groups of people.

The logic of the scientistic world-view is a logic of domination and it developed historically as a tool, materially and ideologically, in the hands of ruling classes in the interests of control or expansion. Habermas speaks to this issue and argues for the essential relatedness of knowledge and interest. A science is ideology when it denies its rootedness in the attempted solution of problems which face certain groups of people. It serves those interests as opposed to other interests when it claims to be neutral or simply "practical period".
Although technological rationality has gone a long way toward creating a world which can almost be accounted for by its logic, the relation of knowledge and interest revealed by Husserl and Habermas points to the possibility of an enlightened form of knowledge informed by an awareness of the relation of knowledge and interest. The ideological power of an assumed "objectivity" is diminished as soon as we are aware of this relation. An interest in emancipation from both material and ideological enslavement gives rise to a different conception of knowledge, one which takes into account existing conditions in a comprehensive manner, but does not restrict itself to that description and call it "natural law".

The practice of sociology will be more unified with a theoretical perspective when both retain the right to judge the described conditions. The grounds for this judgement are, in Mills' terms, the ideals of freedom and reason, a cliche which we might do well to take more seriously. Although we cannot expect an academic discipline to change the world, one which tells people that they cannot, in principle, decide aims and goals cannot enlighten its own practice, let alone have any small, beneficial effect whatsoever on society.
In The Sociological Tradition, Robert Nisbet provides us with a view of the origin and development of the central concepts of sociological thought. In the battle between modernism and traditionalism with the industrial and French revolutions as their setting, Nisbet claims, sociological concepts arose in an effort to outline the ramifications and consequences of various kinds of social order. Nisbet points out (Nisbet 1966: 82-83) that the sociologists' formulations constitute primarily, and especially with Durkheim, a reaction to individualism; social stability, it was argued, could only be assured by maintaining reference to authorities higher than persons. The most consistent choice for this authority was social order itself, society, the social, the institution and the community.

Out of the resulting picture of the underlying elements of social order came also a method for viewing it. Durkheim sees order as the problem to be dealt with, develops a metaphysic providing a notion of the origins of and forces involved in the creation of social orders, and, from this metaphysic, develops a methodology for analysing social organization.
Community and society are made the origins of everything mankind does and knows.

Durkheim's view of the individual is thus as radically social as his view of morality. Man is unknowable, at least to the social scientist, except as a manifestation, a node, of community. The discipline of mind and character is but the personalization of the discipline of the forming group. Normal personality is a reflection of normal integration with community. Abnormal personality is a reflection of the breakdown of this group integration. (Nisbet 1966: 96)

Nisbet maintains that Durkheim was able to translate a metaphysic into a practical methodology most effectively and, further, that Durkheim's Rules contain little more than is assumed by present-day sociologists in empirical studies; even though initial criticisms of Rules have also endured, "the climate of analytical individualism in which they were made has long since been succeeded by one generally congenial to Durkheim's methodological values." (Nisbet 1966: 87) For Nisbet himself the metaphysical root is the least problematic aspect of sociological theory. His own view of the value of the sociological tradition is revealing. He suggests that the sociological tradition, the ideas of a Weber or a Durkheim, are still viable. He is also concerned, however, that a mere credence in Weber or Durkheim could result in "ritualism and inanition."

The process of 'moulding still ductile forms' cannot go on forever. Sooner or later the process of revolt, of abandonment of 'chrysalids' of concept and method, takes place. Perhaps it is taking place in our own day before our unseeing eyes, with some thus fare mute, inglorious Weber or Durkheim even now encapsulating stray hypotheses.
and random observations into a new idea system for sociology: one as different from that which we inherited from the titans of 1830-1900 as theirs was from the idea system of the Enlightenment.

If such a new idea system does appear, to give new life and impetus to the realities of contemporary Western society, it will not be the consequence of methodology, much less of computers, of mass data gathering and retrieval, or of problem definition however rigorous, or research design however aseptic. It will be the consequence, rather, of intellectual processes which the scientist shares with the artist: iconic imagination, aggressive intuition, each given discipline by reason and root by reality. So it has always been and so it is now in those contemporary intellectual areas of most intense creativity. Foremost is the passion for reality - reality not obstructed by the layers of conventionalization, but reality that is direct and unmediated. (Nisbet 1966: 318-19)

In this lies the nexus of the problem. Nisbet claims that Durkheim was able to translate a metaphysic into a practical methodology but the original political roots of the metaphysic become forgotten in the expression "direct and unmediated reality." Letting alone various questions concerning the practicality of methodologies, more immediate questions arise concerning 'translation rules and criteria', the availability of the metaphysic itself to rational and critical clarification. Does a passion for reality result in a picture which is unmediated? Is an unmediated reality more true, possible or desirable?

It is one thing to make assumptions about society and people; it is quite another to assume that one's assumptions bear direct relation to reality. It is perhaps possible that
a definition of the problem defines not only working distinctions but defines in large part the conclusions which may be drawn. The role of the metaphysical in social thought may not be as unproblematic as Nisbet, for example, seems to think.

Since it was the attention paid to the problem of order that gave sociology its raison d'etre the problem will be looked at as both metaphysic and method. Does the 'metaphysic' which becomes 'translated' into a particular methodology perhaps preclude any other conception of order or disorder which is not initially prescribed by the metaphysic which provides the paradigm?

An investigation of this question will provide the central focus here in an examination of some of the ascendant and most influential theoretical perspectives in sociology. I shall pay attention in this analysis to four theorists, Talcott Parsons, Alfred Schutz, Emile Durkheim and Max Weber. The analysis will attempt to cover those aspects of their work which most closely approximate outlines and discussions of basic assumptions about the fundamental nature of human society, basic philosophical and methodological standpoints on the analysis of society and their basic approach to theorizing about society. I have treated primarily their most self-consciously methodological writings.
Talcott Parsons

Talcott Parsons begins his approach to sociology with an inquiry which, he claims, is both an investigation of theories and is a theory itself. This is accomplished, however, by an a priori specifying of a relationship between knowledge and social structure, between environment and the thought about it which specification serves as grounds for a theory which defines the relationship between knowledge and social structure. Parsons claims that the focus of development in European social thought, most specifically in Marshall, Pareto, Durkheim and Weber, is the development of a voluntaristic theory of action. Parsons claims that these four thinkers, aside from other apparent differences, arrived independently, although not fully consciously, at what he calls the voluntaristic theory of action. (This assertion is itself problematic enough but will not be discussed here.) He goes on, then, to claim that this apparent convergence represents the truth or the correspondence of the voluntaristic theory of action to social reality. He claims that since so many thinkers developed this viewpoint it must therefore represent reality. (Parsons 1968: 11-12)

It goes without saying that this convergence, if it can be demonstrated, is a very strong argument for the view that correct observation and interpretation of the facts constitute at least one major element in the explanation of why this theoretical system has developed at all. (Parsons 1968: 12)

Parsons thus connects his interpretation of the work
of other theorists of social structure with social structure itself by means of assuming that the theory for which he hopes to argue is true and valid. He moves in one fell swoop from the general, rather truistic statement that there are connections between science and philosophy to specifying what those relations are, so that for Parsons, "Rational knowledge is a single organic whole." (Parsons 1968: 21)

With this in mind, Parsons claims as well that both theories and empirical reality must be systems. He maintains that concrete individuals in society with reference to the theoretical scheme of action should be thought of as adapting means to ends. (Parsons 1968: 30) Even if we can establish the truth of this position, however, there is still no apparent ground for assuming that those means and ends are inherently or necessarily organized in specifiable systems.

Yet Parsons writes:

We are all engaged in multifarious practical activities where a great deal depends on the "right" selection of appropriate means to our ends, and where the selection, within the limits of knowledge current at the time and place is based on a sound empirical knowledge of the intrinsic relation of the employment of means to the realization of our ends. . . . there can be no question (!) of the pervasiveness of the rational case in all systems of human action. (Parsons 1968: 57, emphasis added)

Although it is true that Parsons is here referring to the point of view of the actor, the systematic nature of what it is that the actor is to have a "sound empirical knowledge of" is simply posited by Parsons. Although he claims that facts as such may only be pictured with reference to conceptual
schemes, either by actors or scientists, he posits, using L.J. Henderson as authority, that both conceptual schemes and the nature of what is depicted are systems. (Parsons 1968: 28, 71fn.) The possible systematicity of knowledge, for Parsons, receives its grounds from an unexamined assumption about the systematicity of the world and of conceptual schemes and of a systematic connection between them. "Knowledge, so long as it is rational, is determined by and is a "reflection" of the things known." (Parsons 1968: 73)

The basic unit of analysis for Parsons in his "action schema" of the relation of means and ends is the unit act. This unit act is conceived of as part of a system. (Parsons 1968: 43) These units and their structural relations are the units out of which action systems are made. (Parsons 1968: 39) That Parsons intends the unit act to be thought of as a part of a system in the same sense that a part is related to a machine is also clear since he expressly uses the term "part" in this sense. He distinguishes "part," such as crank-shaft or unit act, from "analytical element," such as temperature or rationality. (Parsons 1968: 31-35) He thus acknowledges the different sense of theoretical abstraction in the two separate cases but still does not articulate grounds for deciding that unit acts, however conceived, constitute a system. The impetus for this direction in his thought appears ultimately to be a desire both to depict and institute stability in society.
The part in Parson's scheme, the unit act, consists of an actor, an end, a situation and the normative orientation of action based on the type of relationship between the other three elements. In the action schema, actors have a desired end and select means, based on a concrete knowledge of the situation, toward the achievement of the end. Parson's concern here with this fourth element is that in order to make the theory a voluntaristic one the situation must be conceived as consisting of means and conditions. Conditions are beyond the control of the actor whereas means may be altered by the actor in an effort to realize a desired end. If means as well were simply conditions in the above sense then action could not be viewed voluntaristically since all elements would be predeterminate. Parsons, however, also wants to guard against the viewing of the choice of means or ends as being at all random. Because of this Parsons states that the means employed "must in some sense be subject to the influence of an independent, determinate factor, a knowledge of which is necessary to the understanding of the concrete course of action." (Parsons 1968: 44-45) Thus Parsons attempts to devise a theoretical system which allows for both an element of choice on the part of human beings and for a comprehensive, rational grasp of courses of action. In this approach the randomness or systematic comprehensibility of means (Parsons 1968: 44) and ends (Parsons 1968: 59) becomes problematic. The element of choice, however, is endangered in this approach by Parsons' bent for positing systematicity
in the concrete world. "In the voluntaristic theory (normative elements) become integral with the system itself, positively interdependent with the other elements in specifically determinate ways." (Parsons 1968: 82)

It seems as well that "random chaos" or specific determinateness appear to Parsons to be rigid alternatives with no room allowed for a situation lying somewhere in between. In Parsons' scheme scientific understandability of action demands a positivistic conception of the connection between mind and environment but a utilitarian conception of the choice of ends and means on the part of an actor. After stating that the alternative, random chaos -- scientific understandability, is a rigid dilemma (Parsons 1968: 91fn.) in a positivist conception, he goes on to propose a synthesis which depends on the assumption of stability.

(A) social order is always a factual order insofar as it is susceptible of scientific analysis but, . . . , it is one which cannot have stability without the effective functioning of certain normative elements. (Parsons 1968: 92)

In this particular fashion Parsons poses the problem of order. In the utilitarian system of thought the elements of action are conceived of in a fashion similar to Parsons' system except that in the utilitarian system ends are random whereas Parsons wants to picture ends as having a systematic order amongst themselves, particularly with respect to the ends desired by different actors. Locke posited the "identity of interests" on the part of actors to avoid this problem
since he pictured nature as an undepletable reservoir of goods. In Parsons' conception, however, the fact of scarcity makes this identity problematic for picturing social order. He then refers to Hobbes who pictured a state of nature as a war of all against all; as opposed to Locke, Hobbes takes order itself to be problematic. Hobbes wanted to explain how social order came about given his assumption of conflict of interests in the natural state. Locke wanted to talk about the role of government in preserving the fruits of a natural order which he arrived at by his assumption of the identity of interests. Parsons, however, hopes to provide for the achievement of desired ends on the part of individual actors but also wants to schematize the interrelatedness of those ends in a systematic fashion which makes the problem of order thematic. His overriding interest in stability orients him in this fashion.

How is it possible, still making use of the general action schema, to solve the Hobbesian problem of order, and yet not make use of such an objectionable metaphysical prop as the doctrine of the natural identity of interests? . . . (The study's) principal concern will be with one way of escape from the inherent instability of the utilitarian system. (Parsons 1968: 102)

With the advent of positivism and mechanism the order of the environment was taken to be regular and law-like and was taken also to be the only order. With, furthermore, the advent of evolutionism, the Hobbesian war of all against all becomes an ordered struggle for existence. According to Parsons the initial impact of evolutionism was a change to
thought about the world from that in terms of the readjust-
ment of fixed elements back to a static point to conception
of cumulative processes. The faculty of reason which was
pictured as that faculty which relates means to ends is still
static in the new conception but its product, scientific
knowledge, is not. (Parsons 1968: 123) Thus with a picture
of scientific knowledge as cumulative and progressive, there
arises the possibility of a theory of social evolution.
Parsons cites evolution as a "theory of cumulative social
change the dynamic factor in which is the progressive
accumulation of scientific knowledge." (Parsons 1968: 123)

Thus Parsons comes back full circle to an initial
grounding in scientific systematicity. He provides the fol-
lowing justification for the use of the means-end schema:
"the means-end schema occupies a central place in a way which
embodies the methodological schema of positive science."
(Parsons 1968: 451) He begins and ends his volume with
reference to evolution and scientific systems. He begins
with the assumption of systematicity on the basis of science,
develops concepts on this basis and makes an argument for the
evolutionary significance of science. In connection with a
discussion of the interrelatedness of concepts and proposi-
tions in scientific theories Parsons warns that, although
they are logically related, this does not mean that each pro-
position should be derivable from any one -- "on the contrary,
if this were true scientific theory would be sheer tautology."
(Parsons 1968: 10) This, however, is to some extent what
Parsons has done.

He carries further, however, his unexamined ground in the systematicity of science and the assumed systematicity of social reality:

The essential question is how far the state of theory is developed to the point of permitting deductive transitions from one aspect or state of a system to another, so that it is possible to say that if the facts in A sector are \( W \) and \( X \), those in B sector must be \( Y \) and \( Z \).

(Parsons 1964: 20)

Parsons' attempt to provide a theory picturing both choice on the part of the actor and a stable social system in which action takes place within a specifiable order, thus decides heavily in favor of the latter half of that picture. Although he states that actors do not simply react to external stimuli, they still do not actually choose in his theory since actors are said to develop systems of expectations, (Parsons 1968: 5) processes of interaction are to be treated as systems (Parsons 1964: 3), "acts do not occur singly and discreetly, they are organized in systems" (Parsons 1964: 7), motivations come to us organized (Parsons 1964: 9).

Eventually, however, Parsons attempts to ground his focus on system and stability by means of his concept of function. In an essay devoted to the underpinnings of his position, Talcott Parsons bases his functional approach on a biological analogy in which he compares society to biological organisms.

I wish to argue that the concept function is central to the understanding of all living systems. Indeed, it is simply the corollary of the concept living system, delineating
certain features in the first instance of
the system-environment relation, and in the
second, of the internal differentiation of
the system itself. This proposition is based
upon a dual consideration. First, as has been
clear since the great contributions of Bernard
and Cannon, a living system is one which
maintains a pattern of organization and
functioning which is both different from and
in some respects more stable than its environ-
ment. Secondly, the maintenance of this specific
and relatively stable pattern occurs not through
total isolation or insulation from the environ-
ment but through continual processes of inter-
change with it. (Parsons 1970: 29)

Parsons' approach here rests on the observation of
the maintenance of patterns of behavior on the part of bio-
logical organisms and their parts in the face of changes in
environmental conditions. Although he does not argue a case
specifically for viewing society as similar essentially to
biological organisms, he uses two terms upon which his further
conceptualization rests: living system and pattern maintenance.
Having made the assumption that biological organisms and
societies are basically similar and linking the two under the
rubric, living system, Parsons continues to develop the
analogy conceptually with the concept function. The concept
which links 'living system' to 'function' is the concept
'pattern maintenance'. Indeed the concept pattern maintenance
emerges as the organizing principle in Parsons' approach,
logically prior even to the living system analogy.

Parsons begins his approach to function with the
biological example of metabolism, a process requiring the in-
take of oxygen and oxydizable materials in certain proportions
even though the proportions of the two elements in the en-
vironment may vary. At this point, rather than give evidence for the supposed similarity between organism and society the similarity is simply assumed. "Hence the necessity of functional differentiation of different system-environment exchanges, which is fundamental to all living systems."

(Parsons 1970: 30)

With respect to the "internal state of the system," functions for its maintenance may be differentiated along two dimensions or axes. This differentiation provides the framework for Parsons' four-function paradigm of adaptation, goal-attainment, integration and pattern maintenance. The first axis is that of the location of relations.

Thus the kind of difference between system and environment which was postulated as basic to all living systems implies that within the living system itself there will be two distinctive types of mediation: mediation of external interchanges and mediation of internal combinations. This differentiation of the system along the axis of external relations to the environment and internal relations of the components to each other is one of the two primary axes on which the four-function paradigm is built.

(Parsons 1970: 30)

In the formulation of the second axis of differentiation the priority of pattern maintenance shows up clearly.

The second axis is based upon the consideration that a living system not only is different from its environment in various respects at any given moment, but maintains its distinctive organization over periods of time. (Parsons 1970: 30)

Because the maintenance of patterns is here emphasized Parsons is forced also into making a means-ends distinction, since pattern maintenance would be represented in the pro-
curing of means to a 'goal state', whereas action oriented to establishing goal states let alone weighing their relative merits might result in innovation, a condition not lending itself to the priority placed by Parsons on the notions of stability and pattern maintenance.

There is a fundamental basis of differentiation along the range of temporal sequence which consists in the fact that there is not a simple one-to-one relation between conditions necessary for the attainment of a given goal-state and its attainment. The same conditional state of affairs (the establishment of which may itself constitute a goal) can often be a condition of the attainment of a plurality of different goal-states, some of which are alternatives to each other in that, given a set of conditions, only one of a pair of goal states is realistically attainable. Therefore the processes involved with establishing conditions of future goal-states, and the more ultimate or 'consummatory' processes of approaching such goal-states, tend to become differentiated in living systems. At the action level this is very much involved with the means-end relationship. Activities concerned with the procurement of means not only may be logically distinguishable from those concerned with goal-attainment, but are in many cases realistically different. (Parsons 1970: 31)

Parsons' analogy and initial conceptualization, then, may be outlined as follows: Societies or social systems are essentially the same as biological organisms. The term living system is used to represent this similarity. All living systems tend to maintain patterns of organization over time in the face of changes in their environment. Two dimensions or axes are employed, the differentiation of which provides a framework for describing a four-function paradigm. The first axis is differentiated on the basis of whether processes
being accounted for are taking place between system and environment or between the components of the system. The second axis is based on the pattern maintenance notion and is differentiated with respect to whether processes are concerned with the procurement of means to ends or with the attainment of ends.

From this the following typology may be constructed:

<table>
<thead>
<tr>
<th>Internal Relations</th>
<th>External Relations</th>
</tr>
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<tbody>
<tr>
<td><strong>S</strong></td>
<td><strong>Adaptation</strong></td>
</tr>
<tr>
<td><strong>E</strong> Pattern Maintenance</td>
<td><strong>Goal-attainment</strong></td>
</tr>
<tr>
<td><strong>C</strong> Means</td>
<td><strong>Integration</strong></td>
</tr>
<tr>
<td><strong>O</strong></td>
<td><strong>Parsons 1970: 35</strong></td>
</tr>
<tr>
<td><strong>N</strong></td>
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<td><strong>D</strong></td>
<td></td>
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</table>

Each cell represents a functional requisite to be met.

Parson's concept of function, however, seems to be conditioned primarily by a pattern maintenance world-view. He maintains that function is the master concept.

The concept function . . is the master concept of the framework for the relations between any living system and its environment. Functions are performed, or functional requirements met, by a combination of structures and processes.

(Parsons 1970: 35)
The requirements mentioned, however, can constitute requirements only if necessity is implied. This necessity is provided for by the priority of pattern maintenance in Parsons' conceptual schema. The biological analogy would seem to be drawn as a justification for this priority, especially since it is almost totally unaccounted for by itself, even though Parsons draws it first in the description of his conceptualization. After drawing the biological analogy and developing the four-function paradigm, Parsons then mentions the centrality of pattern maintenance. "Among the four pattern maintenance occupies a special place in that it is the focus of stability in both of the two main respects." (Parsons 1970: 32) Parsons further mentions the support for the centrality of pattern maintenance stemming from physiology, cybernetics, information theory and economic theory, with reference to the significance of stability. (Parsons 1970: 35, 37)

It is, after all, because of the stability pictured in the behavior of biological organisms, that Parsons chooses to make his biological analogy. Although he makes this analogy at the beginning of his argument it is justified or developed only in a footnote, at that, to a biologist.

The eminent biologist, Alfred Emerson, has spoken of the functional equivalence of gene and 'symbol', by which he meant that for culture level systems of behavior, which we here call action systems, symbolic systems have the same order of functional significance that genetic systems have at the organic level. (Parsons 1970: 34fn.)
The notions of stability and pattern maintenance are rather blithely transported into notions of social action.

We may put it that the most elementary notion of action implies two functional references, namely, (1) the maintenance of a pattern of orientation and (2) the definition of the significance or meaning of one or more situational objects. (Parsons 1961: 327)

Thus order and its maintenance are emphasized in Parsons' approach. Without imputing motives to the theorist we may say at least that the world-view or paradigm or metaphysic providing the organizing principle for Parsons' approach is a theme which, in itself, remains, at least in the attempt at justification, undeveloped. Whether the biological analogy or the emphasis on stability is logically prior, the argument hinges heavily on the biological analogy. Reasons for expecting societies to be similar essentially to organisms are not given, aside from a conceptual scheme which is itself dependent on asserting that similarity. Parsons' concern is definitely with the problem of order. A picture of how social order should look is produced. How much of that picture has its root in a direct and unmediated reality? In taking Parsons' formulations at face value we cannot tell. No experiential contact was related to us. The question here is the extent to which the resulting picture is already contained in a cosmology and a metaphysic, the rational discussion of which is left over to other disciplines, disciplines deemed to be unscientific. If this is so then discovery, innovation or creation may be lost to us except when considered
as an outline in detail of the implications of an assumption.

To say that social orders are the products of genetics and evolution certainly ensures their stability. Hypotheses might then be produced which can be tested against 'facts' in themselves constituted by the employment of the paradigm which produced the hypotheses.

There is here also the problem of order itself. A cosmology or metaphysic is a conception of order. When used as a basis for inquiring into the nature of social order is the order involved in the metaphysic itself simply mirrored in conceptualization or are puzzles produced which may alter the initial metaphysic? Certainly the latter cannot happen unless that metaphysic itself is discussed.

With Parsons we have a significant reluctance to discuss the analogy on which his approach rests. If it has been worked out it is still not communicated. Alfred Schutz, however, pays more attention to a discussion of ordering principles.

Alfred Schutz

Schutz' ordering principles revolve around a notion of rationality, common-sense and scientific. Common-sense actors, according to Schutz, come to recognize their world, including the other actors in it, in its typicality. Schutz' rationality is then based on this typicality. Typicality, in turn, is based on a similarity of meanings intended on the
part of various actors.

In acting in everyday life our world is a taken-for-granted one. In this taken-for-granted world, or life-world, the meaning for actors of events and persons are subjectively constituted. The more intimate one's relations with others, the greater will be one's stock of knowledge at hand of events involving those others. Based on past experience and on the meaning for us of concepts used in daily life we come to see things in their typicality. When we see the facade of a house, for example, we imaginatively fill in all other sides of it as well as other aspects involved in our concept 'house'. In this situation, however, what we constitute as 'house' certainly does not see us in our typicality. In speaking of the social however, we must deal with this kind of reciprocity. In dealing with the social, a reciprocity of perspectives is involved since I myself can experience having a different here and now at different times and places. Also, since I see the other as having a body like mine and as being a subject, I see him as capable of experiencing the same from a here and now which at one time was my here and now.

In taking into account the intentions and actions of the other I see him in a typical situation and, according to other typifications of that person based on past experience, assess the likelihood that he will perceive my intentions toward him in a typical fashion for these conditions and respond to me in an appropriate manner. The other's response to me is the desired result of my action. My action is the
'because' motive for his action and his response is the 'in-order-to' motive of my action. In as much as we correctly interpret one another typical, understandable results will follow.

The fulfillment of expectations under these conditions, it may be argued, does not require for its occurrence a congruence of interpretation of the situation on the part of the actors involved. Even if we agree that all actors involved see the situation in a taken-for-granted manner, it does not follow that each actor must interpret the situation in the same typical manner. If a typical response from A is based on A's interpretation of a situation in terms of its typicality from his point of view, B may still respond to A's response in a way which is based on B's interpretation of A's response as typical from B's point of view without there necessarily being a similarity or congruence between their interpretations of the situation. The response may even be objectively typical or it may not; expectations are still more or less fulfilled. In other words, we may argue that each of us may see situations in their typicality without there being a congruence between the various interpretations. We may also view the actions of others in ways meaningful for us and in a typical fashion and in a way which is adequate for our ends while the other does the same sort of thing without there being a similarity in the interpreted typicality. All else that is required is a degree of self-consistency on the part of each actor with respect to his responses and perceptions.
At this point, Schutz too is employing a means-ends distinction. The understandability of the results to follow are understandable with reference to the appropriateness of means selected for the attainment of a given end and with reference to the fit of that end with the ends and the selection of means of other actors. (Schutz 1970: 105) The means, however, of deciding the appropriateness of means is positive science itself. Schutz quotes Parsons in this connection.

Action is rational in so far as it pursues ends possible within the conditions of the situation, and by means which, among those available to the actor, are intrinsically best adapted to the end for reasons understandable and verifiable by positive empirical science. (Parsons, The Structure of Social Action, New York: McGraw-Hill, 1937, p. 58, from Schutz 1970: 89)

From the above kinds of formulations, Schutz hopes to develop an understanding of the social world based on ideal types, types based on the typifications of actors and their fitting together. That they do fit together seems to be a matter of assumption with Schutz. Everyone's stock of knowledge, according to Schutz, is limited to a particular zone of relevance, and the further an actor is removed from the particular zone of relevance to be considered, the more anonymous and generalized in his knowledge of that sphere. The key concept behind the fitting together of zones is social approval. Those typifications which are socially approved are those which receive attention in deciding the framework of fit between zones of relevance. It is not stated whether social approval is something derived from the
typification process itself in Schutz. If not, this represents a great weakness in Schutz' approach because if, as a concept providing access to the origins of social order, it does not arise from his initial formulations, it may be representative of a prior unarticulated picture of social order which provides the actual conclusion of Schutz' work.

In viewing the social order more as a whole, Schutz also mentions the concept functionalism.

The concept of functionalism -- at least in the modern social sciences -- is not derived from the biological concept of the functioning of an organism, as Nagel holds. It refers to the socially distributed constructs of patterns of typical motives, goals, attitudes, personalities, which are supposed to be invariant and are then interpreted as the function or structure of the social system itself. The more these inter-locked behavior patterns are standardized and institutionalized, that is the more their typicality is socially approved by laws, folkways, mores and habits, the greater is their usefulness in common-sense and scientific thinking as a scheme of interpretation of human behavior. (Schutz 1970b: 14)

The key terms here are 'standardized' and 'usefulness'. The means-ends distinction applied to the distribution of typifications would appear to be grounded in a notion of scientific rationality. Furthermore, Schutz seems to be making an appeal for a greater rationalization of social life itself rather than simply an argument for depicting the degree of rationality which it may at a given time possess.

Schutz articulates three postulates forming criteria of access to the foundations of social order in which the bases of his approach are more clearly outlined. The postu-
late of subjective interpretation he describes as follows:

   The scientist has to ask what type of individual mind can be constructed and what typical thoughts must be attributed to it to explain the phenomenon in question as the result of its activity within an understandable relation. (Schutz 1970a: 111)

If Schutz could here articulate fully the meaning of 'understandable relation' we would not need to construct any mind. We would then, in fact, in Schutz' terms, understand the order of the social world. What is the relationship between the understandability of a relation and the taken-for-granted, typifying orientations of actors? If "phenomena in question" must be explained in terms of the activity of minds within those undefined understandable relations then it appears as though Schutz is adding dimensions to his analysis of social reality which are not based on nor intrinsically connected with his initial considerations of typifying consciousnesses and the reciprocity of perspectives.

   The postulate of adequacy is as follows:

   Each term used in a scientific system referring to human action must be so constructed that a human act performed within the life-world by an individual actor in the way indicated by the typical construction would be reasonable and understandable for the actor himself as well as for his fellow men. (Schutz 1970a: 111)

Again the criteria of reasonability should be articulated. That an action be reasonable both to a community and a scientist expresses the entire problem of Schutz' work. The terms those constructed must already be based on an adequate knowledge of the very thing which the scientific system is designed to gain a knowledge of, a social order based on the
interlocking of situational interpretations. It seems possible that what Schutz means by reasonability is again not derivable from his earlier considerations.

According to the postulate of rationality:

means-ends relations together with the system of constant motives and the system of life plans must be constructed in such a way that:

a) it remains in full compatibility with the principles of formal logic;

b) all its elements are conceived in full clearness and distinctness;

c) it contains only scientifically verifiable assumptions which have to be in full compatibility with the whole of our scientific knowledge.

(Shutz 1970a: 111-12)

Schutz mentions some further implications of these principles and is worth quoting at length in this connection.

The ideal type of social action must be constructed in such a way that the actor in the living world would perform the typified act if he had a clear and distinct scientific knowledge of all the elements relevant to his choice and the constant tendency to choose the most appropriate means for the realization of the most appropriate end. Indeed, as we had anticipated in the beginning, only by the introduction of the key concept of rationality can all the elements be provided for the constitution of the level called 'pure theory'. The postulate of rationality implies, furthermore, that all other behavior has to be interpreted as derivative from the basic scheme of rational acting. The reason for this is that only action within the framework of rational categories can be scientifically discussed. Science does not have at its disposal other methods than rational ones and it cannot, therefore, verify or falsify purely occasional propositions. (Schutz 1970a: 112)

Although Schutz devotes a great deal of effort to outlining his approach, life-world and the reciprocity of perspectives turn out not to form his organizing principle.
Criteria dictated by his notion of 'pure theory' turn out in the end to be prior to all other considerations. Schutz' concept of order involves notions of formal logic and social approval. If an element or concept cannot be included in the above categories then it does not belong either in science or in common-sense. These notions are introduced by Schutz before he discusses them explicitly. They form the connection, as it were, between typicality and social approval. Contained in Schutz' notion of rationality, then, is a picture of social order which is maintained along side of and, perhaps in spite of, his discussions of the life-world and the reciprocity of perspectives. For Schutz, the ways in which people know each other and conceive of the order of their social world must be socially approved, or there could be no order. Schutz has provided us with his picture of how everyday life should be conducted, a picture grounded in a testimonial to science. Schutz is after a systematic understanding, with the emphasis on the 'systematic'. Schutz' postulate of rationality thus implies a society-makes-people sort of proposition in which a prime condition for knowledge of others is the social approval of typifications. Making our way in the world as human beings would be much more problematic for Schutz in a society in which persons and actions were not invariant and in which our motives and goals were not socially approved ones contributing to the functioning of the social system. Schutz wants as complete a knowledge of the other as possible. The way to do this is to rule out
of discussion any orientation to self or other which is not oriented in the above fashion.

The jump from the reciprocity of perspectives to logical consistency and rationality is a long jump. The jump from seeing events in their typicality to seeing them in their social functionality is a forced one. I suggest that it does not follow from the notion that the life-world is characterized by a typifying consciousness that the constructs of various typifying consciousnesses necessarily be structured in such a way as to produce social order and certainty. In viewing human relationships, the knowledge people may have of each other, as dependent on his definition of rationality, Schutz has prejudged the issue of access to the social.

What, then, is being done when the ways in which people know each other are considered only in so far as a systematic understanding may be achieved? The result is an objectification of the subject so that the person is considered as an instrument or means in the actions of specific others or in the achievement of supra-individual hegemony in the social order itself. Where this understanding of others is possible in terms of Schutz' notion of rationality, the common ground of communication and meaning becomes a pre-defined goal of the social scientist according to which people are recalcitrant tools in the maintenance of a specific social distribution of knowledge. It is one thing to say that knowledge is socially distributed; it is quite another to suggest that this distribution must form a whole whose
parts are inter-connected in specific ways.

Only those aspects which contribute to solidity are considered in Schutz' scheme. The outcome of Schutz' postulate of rationality is that not simply typifications but socially approved typifications receive emphasis.

Socially approved knowledge is the source of prestige and authority; it is also the home of public opinion. Only he is deemed to be an expert or well-informed citizen who is socially approved as such. Having obtained this degree of prestige the expert's or well-informed citizen's opinions receive additional weight in the realm of socially derived knowledge. In our time socially approved knowledge seems to supercede the underlying system of intrinsic and imposed relevances. Polls, interviews and questionnaires try to gauge the opinions of the man on the street, who does not even look for any information that goes beyond his habitual system of intrinsic relevances. His opinion, which is public opinion as it is understood nowadays, becomes more and more socially approved at the expense of informed opinion and therefore imposes itself as relevant upon the better-informed members of the community. A certain tendency to misinterpret democracy as a political institution in which the opinion of the uninformed man on the street must predominate increases the danger. It is the duty and the privilege, therefore, of the well-informed citizen in a democratic society to make his private opinion prevail over the public opinion of the man on the street. (Schutz 1964: 134)

Danger to whom? It seems that the emphasis is not even simply on socially approved knowledge as such, but rather on the notion that certain kinds of knowledge be socially approved.
Emile Durkheim

With Emile Durkheim there is also an emphasis on social approval. His approach, as revealed in The Rules of Sociological Method, is to give account of the permanent and independent existence of phenomena which can be characterized as social and primarily social. Thus Durkheim wishes to demarcate a realm of facts, a realm independent both from other realms and from people.

Here, then, is a category of facts with very distinctive characteristics: it consists of ways of acting, thinking and feeling, external to the individual, and endowed with a power of coercion, by reason of which they control him. (Durkheim 1964: 3)

Externality and constraint become key principles in Durkheim's definition of the social. (Durkheim 1964: 13)

The social for Durkheim, then, is that which exists in its own right and is capable of controlling the actions, feelings and thoughts of people. Further, that which controls the actions, feelings and thoughts of people is that which survives or endures. It must enhance the survival of people and of the social organism, otherwise it would not have exercised control and constraint and hence could not, by definition, be considered social.

There are, however, some ways of acting and thinking which do not, in Durkheim's opinion, enhance societal survival. Those ways which do not enhance adaptation or survival are then designated as pathological, and two separate orders of facts are sought, the normal and the pathological.
(Durkheim 1964: 50, 55) Durkheim suggests making the distinction in the following manner:

We shall call normal those social conditions that are most generally distributed, and the others 'morbid' or 'pathological'. If we designate as 'average type' that hypothetical being that is constructed by assembling in the same individual the most frequent forms, one may say that the normal type merges with the average type, and that every deviation from this standard of health is a morbid phenomenon. (Durkheim 1964: 55)

The distinction between normal and pathological provides the basis, then, for Durkheim's notion of the health or adaptation of the social organism. What is deemed normal is also thought to be the most advantageous for the survival and evolution of the society.

It would be incomprehensible if the most widespread forms of organization would not at the same time be, at least in their aggregate, the most advantageous. How could they have maintained themselves under so great a variety of circumstances if they had not enabled the individual better to resist the elements of destruction? On the one hand the reason for the rarity of the other characteristics is evidently that the average organism possessing them has greater difficulty surviving. The greater frequency of the former is, thus, proof of their superiority. (Durkheim 1964: 56)

Given, then, that it can be evident that the most widespread forms of organization are the superior in terms of effect on societal survival we may expect them to be the most useful. Durkheim goes on from here to suggest that we may check the normality of a phenomenon by observing as well its utility and can do so by "showing that the generality of the phenomenon is bound up with the general conditions of
the collective life of the social type considered." (Durkheim 1964: 64) He distinguishes further that we may infer such connection only when the normality of a phenomenon is "given in the things themselves." (Durkheim 1964: 74)

For Durkheim, the explanation of social facts and their classification are simultaneous and complementary processes, once the generality of a phenomenon is observed from "the things themselves."

We must, then, choose the most essential characteristics for our classification. It is true that we can know them only when the explanation of the facts is sufficiently advanced. These two parts of the science are inseparable and each progresses through the other. Without entering, however, too far into the study of the facts, it is not difficult to conjecture in what quarter we must seek the characteristic properties of social types. We know that societies are composed of various parts in combination. Since the nature of the aggregate depends necessarily on the nature and number of the component elements and their mode of combination, these characteristics are evidently what we must take as our basis; and we shall see from what follows that it is on them that the general facts of social life depend. (Durkheim 1964: 81)

The 'essential nature' or 'characteristic properties' of social phenomena are, for Durkheim, easily accessible. The problem for him is to determine their place in social evolution and their contribution to the stability of a given social order at a given stage in its evolution. Externality is again an organizing principle in Durkheim's thought since it is again emphasized that human needs, at least as experienced by individuals, do not constitute an
essential problem. Speaking of the role of habits in motivation Durkheim states:

These habits, then, had inevitably to yield to each impulse that arose. Thus the fact that we allow a place for human needs in sociological explanations does not mean that we even partially revert to teleology. These needs can influence social evolution only on condition that they themselves, and the changes they undergo, can be explained by causes that are deterministic and not at all purposive. (Durkheim 1964: 93)

What constitutes real needs for Durkheim are the needs of the 'social organism'. These needs are such only with reference to the normality of a given fact under consideration and its fit with the survival of a form of organization. When, then, the explanation of a social phenomenon is undertaken, we must seek separately the efficient cause which produces it and the function it fulfills. We use the word 'function' in preference to 'end' or 'purpose', because social phenomena do not generally exist for the useful results they produce. We must determine whether there is a correspondence between the fact under consideration and the general needs of the social organism, and in what this correspondence consists, without occupying ourselves with whether it has been intentional or not. All these questions of intention are too subjective to allow of scientific treatment. (Durkheim 1964: 95)

The justification, then, for viewing social facts as things is that it then becomes simpler to argue for credence in an authority and community which is deemed natural. Given that the authority and community responsible for people's actions are external to and over and against them, the problem which remains for Durkheim is simply how to perceive and account for them. The generality and, hence, normality of
certain phenomena are said to be self-evident or in 'the things themselves'. There are certain phenomena, however, which Durkheim wished to classify as abnormal, owing to the fact that there is, in them, evidence to suggest that predominant social forms and ways of acting and thinking are not controlling the people concerned.

The pathological is that which is expected to die out, since it makes no contribution to the survival of aggregate forms and, hence, is maladaptive as concerns the 'social organism', unless those pathological forms were to gradually become, or in some way provide for, a new aggregate. Thus, to speak of causes Durkheim also needs to speak of survival and utility. Furthermore, cause, survival or utility can have nothing to do with self-conscious action on the part of individuals, otherwise, at least in Durkheim's terms, the causes could not be considered social causes.

Survival is pictured in terms of stability and evolution. Stability is reconciled with change by considering it in relation to gradual 'progressive' change associated with evolutionism. Because this kind of change is deemed 'progressive', causes and functions can be seen as external to individuals and only those things deemed progressive can be seen as necessary or useful. Thus Durkheim proceeds from normality to utility. Showing a phenomenon's utility is added evidence of its normality. (Durkheim 1964: 64)

The notion of stability is further entrenched in
Durkheim's notion of the relation between cause and function.

Thus, instead of the cause of social phenomena consisting of a mental anticipation of the function they are called to fill, this function, on the contrary at least in a number of cases, serves to maintain the pre-existent cause from which they are derived. We shall, then, find the function more easily if the cause is already known. (Durkheim 1964: 96)

This concept is further extended to provide a picture of social order which contains stability, solidarity and harmony and in which the concepts of function and cause and their interrelation are seen to ensure a stability which is totally within 'the nature of things'.

Indeed, if the usefulness of a fact is not the cause of its existence, it is generally necessary that it be useful in order that it maintain itself. For the fact that it is not useful suffices to make it harmful, since in that case it costs effort without bringing any returns. If, then, the majority of social phenomena had this parasitic character, the budget of the organism would have a deficit and social life would be impossible. Consequently, to have a satisfactory understanding of the latter, it is necessary to show how the phenomena comprising it combine in such a way as to put society in harmony with itself and with the environment external to it. No doubt the current formula, which defines social life as a correspondence between the internal and external milieu, is only an approximation; however, it is in general true. Consequently, to explain a social fact it is not enough to show the cause on which it depends; we must also, at least in most cases, show its function in the establishment of social order. (Durkheim 1964: 97)

Thus Durkheim's picture of the 'should's and 'should nots' of social life are informed by evolutionism and utilitarianism. Added to and complementary to this picture are his notions of how knowledge of 'the nature of things' is
obtained and verified. But, this procedure is itself bound up with his picture of order. Both the procedure and the picture, moreover, are organized by a concept of science, a concept composed principally of causality and uniformity. This science is seen as the only way of providing 'direct contact with things.'

Science alone can teach us to treat historic institutions, whatever they may be, with respect but without mystic awe, by making us appreciate both their permanent and their ephemeral aspects, their stability and their infinite variability.

In the second place, our method is objective. It is dominated entirely by the idea that social facts are things and must be treated as such. No doubt, this principle is found again, under a slightly different form, at the basis of the doctrines of Comte and Spencer. But these great thinkers gave it theoretic formulation without putting it into practice. In order that it might not remain a dead letter, it is not sufficient to promulgate it; it is necessary to make it the basis of an entire discipline which will take hold of the student at the very moment he approaches the subject of his researches, and which will accompany him, step by step, in all his proceedings. We have devoted ourselves to instituting this discipline.

We have shown how the sociologist has to disregard the preconceptions which he had of the facts, in order to face the facts themselves; how he has to discriminate among them their most objective characteristics; how he must seek in the facts themselves the means of classifying them as normal and pathological; how, finally, he must be inspired by the same principle in the explanations he attempts as in the way in which he tests these explanations. For, as soon as he has the feeling that he is in the presence of things, he will no longer think of explaining them by utilitarian calculations or by syllogistic reasonings of any sort. He will understand too well the gap that exists between such causes and such effects. (Durkheim 1964: 143-44)
The procedure resulting from trying to see the things themselves is one in which the 'clear revelation' of facts and their relations results from the posited notion that social reality is thing-like and that societal norms are morally imperative. This is the extent of Durkheim's discussion of the procedure involved: to get at social reality and discover its order we simply have to free ourselves of preconceptions and view the social facts themselves; they are so perceivable because they are things and because of the uniform order and hierarchy in social reality posited in advance by Durkheim. 'Clear revelation', for Durkheim, seems to be something which simply occurs, but can occur only to a scientist. Since social facts have causes which are social facts and since most social facts are adaptive and, hence, enduring, we can view only those aspects of the social which bear upon the evolutionary survival and stability of a society. Even those few aspects which are 'ephemeral' or 'variable' are viewed with reference to the possible function or morbidity in enhancing or inhibiting solidarity and stability. Even if it is admitted, then, that chance or people may have something to do with human life, we, as sociologists, must not pay attention to it. The end of social science, for Durkheim, is the discovery of the factors effecting and the enhancing of stability, order and solidarity as an aid to seeing and helping along evolutionary processes.
It is necessary to compare not isolated variations but a series of systematically arranged variations of wide range, in which the individual items tie up with one another in as continuous a gradation as possible. For the variations of a phenomenon permit inductive generalizations only if they reveal clearly the manner in which they develop under given circumstances. There must be between them the same sequence as between the different stages of a given natural evolution; and, in addition, the evolutionary trend that they establish ought to be sufficiently extended as to lend some certainty to its direction. (Durkheim 1964: 135-36)

It is thus part of Durkheim's metaphysic that social reality, even though it is emphasized in his work that it constitutes a completely separate realm, parallels totally the natural science view of the physical world. This is self-evident to anyone doing science:

Sociology does not need to choose between the great hypotheses which divide metaphysicians. It needs to embrace free will no more than determinism. All that it asks is that the principle of causality be applied to social phenomena. Again, this principle is enunciated for sociology not as a rational necessity but only as an empirical postulate, produced by legitimate induction. Since the law of induction has been verified in the other realms of nature and because it has progressively extended its authority from the physio-chemical world to the biological, and from the latter to the psychological, we are justified in claiming that it is equally true of the social world; and it is possible to add today that the researches undertaken on the basis of this postulate tend to confirm it. (Durkheim 1964: 141)

Thus Durkheim holds that the scientifically appropriate and the morally right may be derived from the simple 'unprejudiced' observance and description of social facts. Just what 'unprejudiced' means and how social facts are constituted, however, is decided with reference to a worldview including naturalism, 'societal utilitarianism', evolu-
tionalism and rationalism. Appropriateness and rightness, furthermore, are seen as immediately given in the things themselves only because the things themselves are constituted a priori in Durkheim's metaphysic of social determinism and externality.

Max Weber

In the verstehen and ideal-typical view of Max Weber, social approval is linked to a concept of rationality.

We have a perfectly clear understanding of what it means when somebody employs the proposition $2 \times 2 = 4$ or the Pythagorean theorem in reasoning or argument, or when someone correctly carries out a logical train of reasoning according to our accepted modes of thinking. In the same way we also understand what a person is doing when he tries to achieve certain ends by choosing appropriate means on the basis of the facts of the situation as experience has accustomed us to interpret them. Such an interpretation of this type of rationally purposeful action possesses, for the understanding of the choice of means, the highest degree of verifiable certainty. With a lower degree of certainty, which is, however, adequate for most purposes of explanation, we are able to understand errors, including confusions of problems of the sort that we ourselves are liable to, or the origin of which we can detect by sympathetic self-analysis. (Weber 1947: 91 emphasis added)

In employing this perspective we are urged to pay attention to meanings. The action of actors in the world is said to be oriented on the basis of the meaning of the objects in the world and, furthermore, that action is social when at least one of these objects is the behavior of others and has as its end particular kinds of behavior on the part of others. Social action, then, is looked at in order to
determine the appropriateness of choice of means towards the attainment of a given end where the selection of means is determined with reference to the meaning which that situation has for the actor(s) in question.

At this point Weber maintains that he is not imputing rationality to the social world and that this perspective is employed only as a methodological device. Action is rational, furthermore, only when oriented to the attainment of certain kinds of ends, which kinds, however, is not articulated by Weber.

The more we ourselves are susceptible to them (ultimate values different from our own) the more readily can we imaginatively participate in such emotional reactions as anxiety, anger, ambition, envy, jealousy, love, enthusiasm, pride, vengefulness, loyalty, devotion, and appetites of all sorts, and thereby understand the irrational conduct which grows out of them. Such conduct is 'irrational', that is, from the point of view of the rational pursuit of a given end. Even when such emotions are found in a degree of intensity of which the observer himself is completely incapable he can still have a significant degree of emotional understanding of their meaning, and can interpret intellectually their influence on the course of action and the selection of means. (Weber 1947: 92)

Weber's method, then, attempts to analyse behavior and action which is rational in its selection of means toward the attainment of a given end or, at least, to account for other kinds of behavior in terms of their deviation from this type. Weber wishes to convey, in his claim that this is simply a method and not a cosmology, the idea that he does not have to attribute a priori properties to social reality and processes in order to comprehend and investigate them.
In Weber's concept of rationality, however, a continual stumbling block for his method is the givenness of ends. Criteria for deciding which ends are to be attained as well as criteria for deciding the 'appropriateness' of means are only implied in Weber's scheme. Concepts of normality and typicality turn out in the last analysis to constitute these criteria.

We apply the term 'adequacy on the level of meaning' to the subjective interpretation of a coherent course of conduct when and in so far as, according to our habitual modes of thought and feeling, its component parts taken in their mutual relation are recognized to constitute a 'typical' complex of meaning. It is more common to say correct. The interpretation of a sequence of events will on the other hand be called causally adequate in so far as, according to established generalizations from experience, there is a probability that it will always actually occur in the same way. (Weber 1947: 99 emphasis added)

Thus Weber wants to pay attention to what is orderly and predictable in the social world. His concept of rationality can be applied to depicting this orderliness only when the ends involved are deemed 'normal'. Persons, furthermore, are to be looked at with reference to whether their goals in action are in some sense typical, normal goals. Their goals are supposed to be normal goals and the means selected for their attainment must be 'appropriate'. The observer viewing the selection of means on the part of the actor must depict and describe that selection in terms understandable to the actor. They are, in this sense, understandable, however, only when normal.
A motive is a complex of subjective meaning which seems to the actor himself or to the observer an adequate ground for the conduct in question. (Weber 1947: 98-99 emphasis added)

Motives as well must be in some sense sanctioned. The comprehensibility of action, in Weber's scheme, is highly dependent on its normality.

A correct causal interpretation of a concrete course of action is arrived at when the overt action and the motives have both been correctly apprehended and at the same time their relation has become meaningfully comprehensible. A correct causal interpretation of typical action means that the process which is claimed to be typical is shown to be both adequately grasped on the level of meaning and at the same time the interpretation is to some degree causally adequate. (Weber 1947: 99)

Thus, in order for Weber's method to be applicable, the givenness of ends must be provided for by implicitly positing the 'appropriateness' of selecting ultimate ends and values which are seen to be contained in modes of orientation to action which are part of value systems. Further, although Weber claims for his ideal-type method the same aseptic quality claimed for his concept of rationality, it too is dependent on a kind of official sanctioning of ends sought and of the appropriateness of means employed for their attainment. 'Social approval' becomes a criterion both for action and its understanding. For Weber, then, in a nutshell, normality plus meaningfulness provides a clear picture of social reality. The frame for this picture, however, is already constructed with a notion of the appropriateness of ends and means in terms of officially sanctioned
value systems.

In line with these criteria, Weber outlines four types of social action:

Social action, like other forms of action, may be classified in the following four types according to its orientation:

1) in terms of rational orientation to a system of discrete individual ends (zweckrational), that is, through expectations as to the behavior of objects in the external situation and of other human individuals, making use of these expectations as 'conditions' or 'means' of the successful attainment of the actor's own rationally chosen ends; 2) in terms of rational orientation to an absolute value (vertrational); involving a conscious belief in the absolute value of some ethical, aesthetic, religious, or other form of behavior, entirely for its own sake and independent of any prospects of external success; 3) in terms of affectual orientation, especially emotional, determined by the specific affects and states of feeling of the actor; 4) traditionally oriented, through the habituation of long practice. (Weber 1947: 115)

The difficulties incurred at this point in interpreting Weber are a key to his implied picture of social order and of the value which Weber attaches to it. What sense can it make to say that action is rational when, as one condition, the ends are rationally chosen? Success, in Weber's terms, is achieved only by means of following the first or purposive-rational type of action. The first, second and fourth types all involve ends which are in some way existent in a socially approved and sanctioned fashion. Ends are selected from available systems. Weber's method, furthermore, follows the orientation of one type of action, purposive-rational. Thus, even though Weber states explicitly that he
does not wish to impute a rational nature to the social world, he does so, in the last analysis, by suggesting that those not following purposive-rational courses of action are unsuccessful, in error or irrational. He is able to argue this case only because he suggests that ends must always be given, legitimate in some way, and originating in some system of ends or values, which is external to the actor. Thus the criteria of success, by which action is judged to be rational, must also be 'given', provided institutionally. Value itself becomes something not decidable in the last analysis by human beings:

The orientation of actions to absolute values may thus have various different modes of relation to the other type of rational action, in terms of a system of discrete individual ends. From the latter point of view, however, absolute values are always irrational. Indeed, the more the value to which action is oriented is elevated to the status of an absolute value, the more 'irrational' in this sense the corresponding action is. For, the more unconditionally the actor devotes himself to this value for its own sake, to pure sentiment or beauty, to absolute goodness or devotion to duty, the less is he influenced by consideration of the consequences of his action. (Weber 1947: 117)

The ends given in rational action, in Weber's scheme, are provided for with the notions of legitimate order and the corporate group. Ends are contained in value systems in turn contained in various legitimate orders which are embodied in corporate groups.

Action, especially social action which involves social relationships, may be oriented by the actors to a belief (Vorstellung) in the existence of a 'legitimate order'. The probability that action will actually empirically be so oriented
will be called the 'validity' (Geltung) of the order in question. (Weber 1947: 124)

Although Weber is here also attempting to be careful not to impute the nature of social reality in his concepts (his translator and editor, Talcott Parsons, also points out in a footnote that by 'validity' Weber means normative validity), he is nonetheless positing the source of ends which may be given in rational action and, hence their externality to human beings. In Weber's ontology, the existence of legitimate orders and corporate groups is posited as a probability.

Thus for sociological purposes there does not exist, as there does for the law, a rigid alternative between the validity or lack of validity of a given order. On the contrary, there is a gradual transition between the two extremes; and also it is possible, as it has been pointed out, for contradictory systems of order to exist at the same time. In that case each is 'valid' precisely to the extent that there is a probability that action will in fact be oriented to it. (Weber 1947: 126)

Thus, for purposes of the terminology of this discussion, the corporate group does not 'exist' apart from the probability that a course of action oriented in this way will take place. If there is no probability of this type of action on the part of the particular group of persons or of a given individual, there is in these terms only a social relationship but no corporate group. On the other hand, so long as there is probability of such action, the corporate group, as a sociological phenomenon, continues to exist, in spite of the fact that the specific individuals whose action is oriented to the order in question, may have been completely changed. The concept has been defined intentionally to include precisely this phenomenon. (Weber 1947: 146-47)

That toward which action is oriented exists then as an order. The validity of orders and the existence of corporate groups whose action is oriented to those orders is
posited as the probability that action so oriented will take place. Social action, then, has rationally chosen ends only when the ends are institutionally available in the sense that, on the average, for a given society, action so oriented will be seen as normal and typical. All types of social action, including irrational types, are seen by Weber to be oriented to and receive their impetus from orders (Weber 1947: 130) and, hence, only action which is in some sense normal and typical is understandable, for "relationships exist only as systems of human action with particular subjective meanings." (Weber 1947: 134)

Although Weber attempts again not to posit an ontology in suggesting that the sociologist consider as an ethic what the actors in question consider to be an ethic, he can only do so by creating a different ontology. In this ontology values, normative orders, corporate groups, motives, meanings and ultimate ends are said to exist in the social world but to exist apart from the individual persons whose actions we are thus attempting to understand. The meanings referred to can be dealt with only when they are 'average' meanings (Weber 1947: 89) and the origin of these average meanings is in 'complexes'. (Weber 1947: 101) Rational action can take place only when its ends are defined in the context of institutionally defined meaning-complexes and those meanings and ends can be seen by actors as legitimated only when they are contained ready-made in such orders. For
Weber, then, social order equals rational action plus legitimacy.

The ginger and caution involved in Weber's methodology is the more understandable when we consider his statements concerning objectivity and ethical neutrality in social science. The difficulties engendered in his discussion of the ultimate ends of rational action become clearer when we consider his personal difficulty in deciding the ends of social science.

The impossibility of 'scientifically' pleading for practical and interested stands -- except in discussing the means for a firmly given and presupposed end -- rests upon reasons that lie far deeper.

'Scientific' pleading is meaningless in principle because the various value spheres of the world stand in irreconcilable conflict with each other. (Weber 1946: 147)

Since the conflict of values is posited as irreconcilable, Weber acquiesces to the point of suggesting that the ends of rational action and the legitimacy of orders and meaning complexes must simply be given by one of those conflicting spheres. The conduct of inquiry, then, is oriented to showing where, given the ends of action, the most efficient means for its attainment have been chosen. For Weber, conflict is irreconcilable and inevitable and the world can be mastered only by calculation.

 Principally there are no mysterious incalculable forces that come into play, but rather... one can, in principle, master all things by calculation. This means that the world is disenchanted. One need no longer have recourse
to magical means in order to master or implore the spirits, as did the savage, for whom such mysterious powers existed. Technical means and calculations perform the service. This is above all what intellectualization means. (Weber 1946: 139)

Since, according to Weber, people believe all things to be masterable by calculation, the world is disenchanted. Since the world is disenchanted, all things are masterable by calculation. The ends, furthermore, to be served in this mastery are irrelevant to the scientist qua scientist. The scientist as such, in fact, is the only type of person not burdened with this responsibility. The scientist can help judge which means should be chosen for the attainment of ends determined with reference to value spheres which, according to Weber, are in irreconcilable conflict. Weber's way out of the conflict is to provide for himself a position which he justifies as serving ultimate rational ends, in themselves not connected to ultimate value positions. He is in the business of Entzauberung, disenchantment; he relates means to ends.

In terms of its meaning, such and such a practical stand can be derived with inner consistency, and hence integrity, from this or that ultimate weltanschauliche position. Perhaps it can only be derived from one such ultimate position, or maybe from several but it cannot be derived from these or those other positions. Figuratively speaking, you serve this god and you offend the other god when you decide to adhere to this position. And if you remain faithful to yourself, you will necessarily come to certain final conclusions that subjectively make sense. This much, in principle at least, can be accomplished. (Weber 1946: 151)

Integrity, for Weber, is to allow value decisions to
be made by others. In the field of inquiry, Weber admonishes those who attempted to claim immutability for certain aspects of reality and, on the basis of that immutability, to claim the moral rightness of following the patterns of those aspects of phenomena.

The formulation of this distinction (between existential and normative knowledge) was hampered, first, by the view that immutably invariant natural laws -- later, by the view that an unambiguous evolutionary principle -- governed economic life and that accordingly, what was normatively right was identical -- in the former case -- with the immutably existent -- and in the latter -- with the immutably emergent. With the awakening of the historical sense, a combination of ethical evolutionism and historical relativism became the predominant attitude in our science. This attitude sought to deprive ethical norms of their formal character and through the incorporation of the totality of cultural values into the 'ethical' (Sittlichen) sphere tried to give a substantive content to ethical norms. (Weber 1949: 51-52)

Since Weber sees value spheres as being in irreconcilable conflict, he also sees the need for keeping ethical considerations at a purely formal level. Various ethical standpoints are seen as equally legitimate as long as they are existent in the sense that action will often in fact be oriented to those standpoints and as long as those standpoints are embodied in corporate groups. Thus to give substantive content to ethical norms on Weber's part would be to align oneself with a particular order and, hence, to be engaged in an irreconcilable conflict.

What Weber ends up doing, however, is to provide a substantive ethic based not on the natural but on the insti-
tutional. Means may be deemed appropriate for serving anyone's ends, as long as anyone represents a legitimate, embodied institution. What exists on the average, is good on the average.

All serious reflection about the ultimate elements of meaningful human conduct is oriented primarily in terms of the categories 'end' and 'means'. We desire something concretely either 'for its own sake' or as a means of achieving something else which is more highly desired. The question of the appropriateness of the means for achieving a given end is undoubtedly accessible to scientific analysis. (Weber 1949: 52)

'Practical meaningfulness' then becomes the substance of Weber's own standpoint. The choice of other ends may be judged as to the probability of their achievement given the means available in present historical conditions. That this practical meaningfulness is a deeply situated value in Weber's orientation may be seen clearly on examining his comparative studies of religion.

In The Protestant Ethic, Weber outlines the development of the disenchantment and practical meaningfulness mentioned above in the intellectualization of life in the west. Weber points out that the rational pursuit of wealth in the west was the result of a belief that, although wealth for its own sake was evil, "the attainment of it as a fruit of labor in a calling was a sign of God's blessing." (Weber 1958a: 172) His lament for this situation is that the roots of value orientation have died out and, hence, we are locked in a cage. (Weber 1958a: 177-183)
In *The Religion of India*, however, it becomes clear that Weber is concerned only that we are locked in a cage, not that wealth is pursued for its own sake. His ontology, metaphysic and values come out clearly in his assessment of Indian philosophy.

They were, indeed, protected by the rigid ceremonial and hieratic stylization of their life conduct from the modern occidental search, for the individual self in contrast to all others, the attempt to take the self by the forelock and pull it out of the mud, forming it into a 'personality'. To Asia this was an effort as fruitless as the planned discovery of a particular artistic form of 'style'. Asia's partly purely mystical, partly purely inner-worldly aesthetic goal of self-discipline could take no other form than an emptying of experience of the real forces of experience. As a consequence of the fact that this lay remote from the interests and practical behavior of the 'masses', they were left in undisturbed magical bondage. (Weber 1958b: 342 emphasis added)

Whereas Weber's lament for Protestantism is simply that we have become locked into its consequences, his lament for Hinduism is that it is not, at root, economically rational. He does not, however, regret the lack in the Protestant west of erotic and contemplative technique. (cf. Weber 1958b: 165)

Whereas Durkheim attempted to constitute the good and the ethical on the grounds of natural law and evolution, and also whereas Weber claimed to have avoided this sort of identity theory, Weber, in actuality, posits the normality and rightness of the purposive-rational pursuit of economic ends. Durkheim posits the realm of natural law as the template of right conduct whereas Weber posits the institutional
validity of value spheres as this source.

Thus in the four theorists chosen there are several continuities reflecting a similarity in world-view. Parsons' notions of stability, function, system, and pattern maintenance, Schutz' typification, scientific rationality and social approval, Durkheim's evolution, progress, normality, social determinism and natural law and Weber's ideal types, legitimacy, rationality and ethical-neutrality, all reflect a world-view which sees the necessity in the social world of social approval, externality and constraint and, for viewing that world, the separation of the person from the scientist. Nisbett's implication that metaphysics and their translation into practical methodologies are unproblematic now appears more questionable. The practicality of methodologies turns out, in the end, to be practicality only with reference to the ends dictated by the metaphysic. Pictures of society and social reality have been produced with notions of social approval, externality and constraint as key principles in construing that picture. The picture is translated into a methodology which takes as given, immediate and eternal the status of human action as effect but never as cause. The question as to what constitutes causal agents, and the universality of the principle of causality itself, is already decided. The resulting methodology, therefore, is judged practical in so far as it assists in depicting the appropriateness of types of conditions and persons as means to the achievement of ends.
which are seen as given by the social system.

The key in this conception is the givenness and immediateness of the theorist's initial concepts. The instrument and source of this givenness and this immediacy is, according to Nisbet, a 'passion for reality'. This passion is a passion for reality as long as one agrees that reality can be equated with externality and social control and that the practicality of the resulting methodology consists in achieving results which serve the ends of order and control.

Some recent writers commenting on the problem of the problem of order express consensus on one point at least: that conceptions of orders do not flow unmediated from reality itself, that order and orderliness are in themselves very problematic concepts. (Dawe 1970; Gouldner 1970; Meadows 1967; Baumann 1973) The provision of a sociological solution to the problem of order contained in its traditional definition is outlined by Alan Dawe. Dawe argues that the centrality of concepts such as external constraint, authority, the sacred was a creation of the conservative reaction to the Enlightenment, the French Revolution, and the Industrial Revolution. The sociological perspective, then, was a conservative one seeking a supra-individual hegemony which could constitute a stable authority.

In this perspective, the development of sociological thought appears as a series of mutations in the notion of external constraint. Externality becomes internalization, constraint
becomes a moral imperative, the individual becomes the social self, and society as a deus ex machina becomes society as a reality sui generis. In Weber's typification of bureaucratic order, in Durkheim's abiding concern with moral solidarity and, latterly, in the conceptual web woven by Parsons around the 'collectivity-integrative sub-type of the moral type of evaluative action-orientation', the basic continuity is clear. (Dawe 1970: 207)

In this tradition, since the problem is defined as the problem of order, eternally valid conceptions of order are posited by picturing the person as a reflection of the social system and meaning as a reflection of value systems. This definition of the sociological problem, thus, is more than a simple working distinction but constitutes "a doctrine which defines a universe of meaning for sociological concepts and theories." (Dawe 1970: 208)

Paul Meadows argues that "conceptualizations of social organization have been a function of the conceptualizations of the problem of order and orderliness." (Meadows 1967: 78) He states, following Collingwood, that there have been three great metaphors of order, the Greek, Renaissance and Modern. The Greeks saw man as rational and, seeing nature also as alive and displaying orderly motion, posited the rationality of nature. In the Renaissance view nature is viewed as a machine whose energy and motive force comes from without and which is to be expressed in the form of natural laws. The Modern metaphor accepts the Renaissance view of the natural world and claims that this view holds as well in the realm of human affairs. In sociological theory, order is here as well
imputed by means of analogy or metaphor where it is claimed to have been discovered. The metaphor employed is the Modern one.

Alvin Gouldner responds to the ideology of discovery concerning the nature of man and society in stating, "The use of particular methods of study implies the existence of particular assumptions about man and society," (Gouldner 1970: 28) for "social science is a part of the social world as well as a conception of it." (Gouldner 1970: 13) Gouldner also attacks the supposed aseptic quality of methodologies.

When viewed from one standpoint, 'methodology' seems a purely technical concern devoid of ideology; presumably it deals only with methods of extracting reliable information from the world, collecting data, constructing questionnaires, sampling and analysing returns. Yet it is always a good deal more than that, for it is commonly infused with ideologically resonant assumptions about what the social world is, who the sociologist is, and what the nature of the relation between them is. (Gouldner 1970: 50-51)

Because of the assumption of this relation and owing to the presumed 'objectivity' of the methods employed, the sociologist is able to make appear discovered that which is shaped and torn from its human context by assumptions and sentiments.

Rooted in a limited personal reality, resonating some sentiments but not others, and embedded in certain domain assumptions, every social theory facilitates the pursuit of some but not of all courses of action, and thus encourages us to change or to accept the world as it is, to say yea or nay to it. In a way, every theory is a discrete obituary or celebration for some social system. (Gouldner 1970: 46)
Which courses of action are facilitated and which kinds of society celebrated is further decided by the background assumptions involving notions of externality and constraint. Bauman (1973) views the concept of culture in sociology as an ideology of constraint. The externality posited justifies and facilitates the viewing of possible human response as necessarily regular and predictable.

Like the notion of 'social system', the term 'culture' responds to the need to express the vague idea of the interlocking, dovetailing elements of human life, of an intrinsic congruence of human individual biography as well as of consistency within the individual's interaction; it stands for the hope of the essential predictability of the human responses to standard contingencies, the hope built on the assumption of the basically determined nature of human life activity.
(Bauman 1973: 159)

The sociological tradition, then, views the natural and social worlds as necessarily and eternally orderly, regular and predictable and views the source and production of this order and regularity as being outside the person. Culture is seen as that which was a specifically human creation, but which is no longer a human product. Since this order is deemed inevitable and as external to human beings, the human being must orient himself to this order and regularity. In this, the orientation of human beings to orderliness and regularity, lies the practicality of the methods derived from sociological metaphysics. Human beings must be constrained from acting in fashions inimical to orders deemed natural and inevitable.
This raises questions as to the possible human role in the creation of reality and, hence, of social scientific pictures of it; is there justification for depicting present conditions as necessary and eternal? Has social science been successful in purging inquiry of interest or value? What possible kinds of practicality can result from the employment of different metaphysics? Is the question of human nature approachable within science?

It will be argued here that sociological thought has served as a contributor to and apologist for what may be called a technocratic order. The shift, particularly as represented by Durkheim, from a substantive notion of the orderliness of social activities to one which raises the social order itself to a formal standard for action thus becomes able to justify any form of action and organization as long as it is official or established. It represents a status quo position, the victory of instrumental reason.

The exhortation involved in this model of society is that we should not act in ways inimical to orders which are deemed natural. This is in itself a contradiction, for, if those orders are indeed "natural", no exhortation would be necessary. The notion of an exhortation thus represents the idea that those orders are not natural or inevitable and, hence, the nature of such theoretical models as theodicies.

It is primarily in this sense as well that any methodology developed from such a metaphysic may be deemed practical.
The next chapter will treat such methodologies and their philosophical justification.
CHAPTER TWO

The Problem of Order and Method: The Pathology of Perception and the Autonomy of Fact

It is the purpose of this chapter to examine some of the more contemporary "practical methodologies" based on the acceptance of the problem of order and its concomitant metaphysic of externality and constraint, and the philosophy of science developed to underpin such methodology. The writers examined for this purpose are George Lundberg, Paul Lazarsfeld, Scott Greer, and Karl Popper.

George Lundberg

In his approach to sociological knowledge, George Lundberg characterizes sociology as a method of adjustment to environment.

Human sociology deals with the communicable adjustment technics which human groups have developed in their long struggle to come in terms with each other and with the rest of their environment. (Lundberg 1963: 33)

Lundberg thus considers science and commonsense to be alike in this respect. They represent methods of coming to terms with, adjusting to, or coping with an environment. This adjustment, furthermore, represents a tension experienced on the part of an enquirer. "All enquiry begins with an
experienced tension or imbalance of some sort in the inquiring organism." (Lundberg 1963: 33)

In developing this line of reasoning, however, Lundberg introduces several qualifications and distinctions which separate science from common sense but which allow the retention of the direct one-to-one relation between enquiring organism and environment.

When certain tensions are formulated verbally they tend to take the form of a question. The tentative experimental answer to this question is called a hunch, a guess, a hypothesis, or a postulate. A tentative answer of this kind serves as a basis for the orderly assembling of data which will establish more firmly, modify, or refute the hypothesis. A hypothesis which is corroborated by repeated observations made by all qualified observers is thereupon called a principle or a law. Hunches, hypotheses, and guesses are produced, of course, by the responses of the organism to some situation, i.e., through data of experience, just as are the more adequately supported generalizations called principles or laws. 'Hunches' differ from 'principles' only in that the former rest upon more subjective (i.e., private, unverified), transitory and quantitatively inadequate data. These characteristics have frequently misled men to believe that 'hunches' are somehow generated spontaneously in the 'mind' - a view which is here repudiated in favor of the position stated above. (Lundberg 1963: 35 emphasis added)

Hunches differ from knowledge, then, not in their origins but in the degree of corroboration, the quantitative adequacy of corroborative data, and in the qualifications of observers making repeated observations.

Data, for Lundberg, are always "the responses of the organisms-in-environment" and, as a corollary to this, there is an external world with variations in it and in the
responders to it. (Lundberg 1963: 40-1) The symbols which are invented to represent these responses are the "immediate data of all communicable knowledge and therefore of all science." (Lundberg 1963: 41) And further:

All propositions or postulates regarding the more ultimate 'realities' must always consist of inference, generalizations or abstractions from these symbols and the responses which they represent. These extrapolations are in turn represented symbolically, and we respond to them as we respond to other phenomena which evoke behavior. (Lundberg 1963: 41)

The nature of a phenomenon, for Lundberg, can be inferred from "symbolized sensory experience", the immediate datum. The response to the stimulus of an event results in the use of a symbol representing its nature. These symbols may in turn constitute stimuli, the nature of which may be represented by their symbolization. Knowledge, then, is the behavior evoked by events, physical or symbolic. Lundberg further assures the unity of scientific method by asserting that there is no difference between our response to symbols and our responses to concrete physical objects; they both consist of "reactions of sense receptors to stimuli from outside or inside the organism." (Lundberg 1963: 53)

Furthermore, words or other symbols represent objective phenomena when large numbers of individuals use the same term. This is the case, according to Lundberg, to the extent that we are conditioned in the same stimulus response situation. When large numbers of individuals use the same term to designate similar behavior the phenomena responded to by the said term
may be designated as objective. "Phenomena are objective in science to the extent that this criterion of agreement, corroboration, or verifiability is satisfied." (Lundberg 1963: 53)

Inquiry, then, begins with a tension experienced on the part of the inquiring organism. This tension, furthermore, is a response to an environmental phenomenon or event. The symbolization of this event, when the symbol involved is sufficiently agreed upon, is taken to represent the nature of that phenomenon. This symbol, furthermore, is capable of being experienced as an object and its nature can be reflected in appropriate, commonly held symbolization. Knowledge, then, is symbolic behavior, the meaning and scientific significance of which rests in its common meaning for qualified observers.

At this point, however, it seems reasonable to suggest that if Lundberg could distinguish the activities of qualified and unqualified observers (i.e. what makes an observer qualified) he could have answered all of his questions. When his argument reaches the point of stating the need for intersubjective verifiability, Lundberg argues that only certain subjects possess the capability to represent a verified point of view, but does not tell us what precisely distinguishes these subjects from others. The distinction seems especially problematic since all of us are seen as conditioned by external environmental events.

That Lundberg is aware at this point of the lack of grounding for his epistemology is also clear since he does,
then, attempt to give it grounding. His grounding, however, refers back to his notion of knowledge as an adjustment technic. The key problems here, for Lundberg, are the intersubjective reference of words to identical experience and a basis for viewing knowledge as an adjustment technic. He combines the two problems in asserting the sociological classifications are the symbolic representations of adjusting experience.

The point to be observed is that the divisions, categories, classifications, and groupings of the universe are words representing differential responses of man. The objectivity of any aspect of the universe (situation) as contrasted with another, therefore, depends upon its capacity to evoke uniform responses from large numbers of people. (The assurance that different people use a word to represent the same kind of experience is to be achieved) chiefly through specifying in terms already highly objectified and, ultimately in overt behavior of some sort, such as pointing to an object, or going through the operations which we use the new term to designate.

It is quite essential to remember this basic nature of all categories in order to avoid becoming involved in insoluble metaphysical questions of ultimate reality, . . . , and in order not to create the impression that the various classifications of human groupings. . . represent anything more ultimate than ways of responding to aspects of the universe to which adjustment of some sort is made. On the scientific level that adjustment consists chiefly of the need of scientists to relieve the intellectual tension which comes of inability to fit certain phenomena into a coherent framework so that their curiosity can come to rest. (Lundberg 1963: 62-3)

Although Lundberg expresses the desire to avoid ultimate metaphysical questions, his own formulations involve or assume a solution to all of these questions. He assumes
an external world, the achievement of knowledge through the mirroring of reality by means of sense-data and the existence of equilibrium or lack of 'tension' as a normal state of affairs. Even given these assumptions, however, there exist still more basic criteria in Lundberg's scheme. Observers capable of mirroring this reality must somehow be qualified and, as the most fundamental qualification, the resulting knowledge-behavior must be of some practical use as an adjustment technic. Although Lundberg assumes to have solved his problems by means of these last two considerations, he has, in fact, simply begged the question. Questions of the ontological and epistemological status of objects of the social world and how knowledge of them is obtained, may now be seen as questions concerning the qualifications of observers and the question of what is to be seen as practical.

The need to explain error would seem to be the reason behind Lundberg's mention of the qualification of observers since his initial formulation of the research process involves events and procedures which, he states, are common to all of us, an adjusting response to environmental phenomena. The 'practical adequacy' of possible adjustment responses becomes, in the end, for Lundberg, the criterion of judgement for scientific frameworks, and is that which distinguishes scientific frameworks from other frameworks. In a section of his essay bearing the sub-title "the utilitarian test of all thought system", Lundberg states:
The only legitimate criterion for judging frames of reference, as such, is the degree to which they are consistent with themselves. From the standpoint of the use of a given frame as a chart or compass for practical adjustments, the criterion becomes, of course, its practical adequacy, i.e. its usefulness in securing the desired adjustment. (Lundberg 1963: 64)

The formulation, however, simply begs the question further. The question of what is useful or practical is the same as the question of what is desirable. If Lundberg has a well-formulated argument as to what is desirable, the communication of that argument could have taken the place of most other considerations in his essay and could have laid a much better groundwork for an orientation to social research. In speaking of a "desired adjustment" it is relevant to ask, desired by whom? for which ends? Perhaps for the ends of qualified observers. This would seem to be the case with Lundberg since the immediate ends of the adjustment process at the scientific level is the coming to rest of curiosity. It would seem that a notion of practicality or adjustment, the immediate sign of which is the coming to rest of curiosity, could be seen as oriented specifically to those ends.

By means of these ungrounded distinctions Lundberg is able to relativize the notion of practicality as usefulness in adjustment so that use means use within the framework of existing societal conditions and dominant forms of rationality.

Since failure to recognize the essential nature of propositions, postulates and frames of reference... results in the most widespread and fundamental misunderstanding and futile arguments, these essential points cannot be too
strongly emphasized. It must be admitted too that scientists as well as their opponents frequently overlook these considerations. The tirades against religion, theology, and other systems of thought by erstwhile adherents to these faiths who have recently discovered 'science' are often evidence of a mistaken notion regarding the nature of both science and the faiths of the fathers. All of these systems are merely adjustment technics which have been found more or less satisfactory to their adherents under given conditions at different times. As times and conditions change, all of these frames of reference, including present science, may be expected to prove inadequate, and be abandoned for radically different postulates, and may proceed perhaps, according to different technics and systems of logic. (Lundberg 1963: 65)

In light of this relativism, however, Lundberg's exhortation against not realizing his notion of the logic of science appears curious. How is he to know when a revolution in thought is appropriate and when not? Lundberg accepts, first of all, that he knows what present, given conditions are, and, secondly, as a principle, that thought should and must be oriented to the patterns of those conditions. Lundberg's ultimate position becomes clearer at this point and he is worth quoting at length in this connection.

The tests of the adequacy ('truth') of any system at any given time will in any event be determined by certain empirical tests, notably whether the system affords a rationale of the adjustments that have to be made and whether it aids in planning those adjustments. The vogue of 'physical' science today springs from just such demonstrable relevance in an industrial, mechanical age in which adjustments to remote environments have become necessary through highly developed means of communication. The same conditions have, of course, forced the 'social' sciences in the same direction and will ultimately, I think, compel them to align
themselves completely with the 'physical'. But it is impossible to show that the orientations of science have any greater (or as great) relevance to the practical adjustments of life in a convent or a monastery (and some of the present academic counterparts of these societies) than theology. Different ways of life demand different ways of thought. In abandoning here the traditional distinction between the 'physical' and 'social'; 'mental' and 'spiritual' we are not doing so under the delusion of having 'discovered' 'new' 'absolute' truth. Neither do we deny, ignore or abolish any phenomena whatsoever. Philosophies may themselves be considered sociologically as systems of verbal behavior, but their declared objectives and objects (entities allegedly represented by the words employed) need not be considered in a scientific framework unless the phenomena designated by the words used can be verified. We aim merely to discuss from a certain explicit point of view the same behavior phenomena with which all other sociological systems (including all the theologies and social philosophies) deal, and to organize them as far as possible according to the general pattern of science. The 'truth', the 'merits', or the advantages of the point of view will have to be determined by the same practical usefulness which has given modern science in other fields its prestige and its following as against the thoughtways it has supplanted. (Lundberg 1963: 65-6)

In short, Lundberg is here arguing that what ought to be is an orientation of adjustment to environment or, in other words, action toward a fitting in with present conditions. In light of this, it is also curious that, five lines later, he exhorts us not to deal in science with considerations of what ought to be. (Lundberg 1963: 66) At this point Lundberg recedes to a particularly Weberian position, and draws a distinction between social problems and sociological problems. Even though it is permissible and useful for sociologists to teach courses on reform, ethics, religion, idealism, current events and social work, says Lundberg, sociological problems
may still be distinguished from the social because they have to do with the formulation of verifiable relationships. (Lundberg 1963: 66-7) That Lundberg's notion of the legitimacy of certain "forms of adjustment" is a status quo position is also clear.

If it is found administratively convenient or otherwise advisable to give this instruction in departments of sociology and by 'sociologists' that is again a practical question of educational administration. (Lundberg 1963: 67)

Thus Lundberg is unable to account for the sensory approach to knowledge of the social by means of his pragmatic, utilitarian criteria. Only by viewing practical action as that which is "in tune" with dominant present conditions can social science pretend to adopt an approach which is thus psychologistic, utilitarian and beauracratically rationalized. The formulation that a valid proposition is one that is corroborated by qualified observers and that is of practical use simply begs the question as to how qualification and practicality are to be decided and this question, furthermore, is not answered by the postulate of a psychologistic epistemology in which sense data produce knowledge since in this view everything would have to be seen as practical and truthful.

Paul Lazarsfeld

The thought of Paul F. Lazarsfeld represents an approach to the philosophy of social science in which questions of general epistemology and logic take second place to an
account of actual research practice. Lazarsfeld takes this approach because, in his view, "In the correct sense of the term, as yet there is no systematic theory in the social sciences, only research procedures and a number of low level generalizations." (Lazarsfeld 1972: 263) And further:

Today's behavioral science concepts do not form part of a tight logical system. Their role is to summarize a variety of observations and to store them, one might say, for systematic use in a 'theory' which we hope will one day develop. In our case the specification of meaning consists mainly in making explicit what kind of observations are to be combined and for what general purposes the 'variables' we form are intended. (Lazarsfeld 1966: 181)

In light of these considerations, Lazarsfeld's approach is what he terms a 'diagnostic procedure' which relies on 'dispositional concepts' in contrast to a strict hypothesis-testing method. The actual research process, in his view, is the flow from concepts to empirical indices and is marked by four stages. "(1) an initial imagery of the concept, (2) the specification of dimensions, (3) the selection of observable indicators, and (4) the combination of indicators into indices." (Lazarsfeld 1966: 187)

Descriptions of this process may be found also in other works of Lazarsfeld with only slight variations. (1970: 12-14, 1972: 268-70) What is most important in this process is the translation of concepts into operational instruments which permit the classification of people and groups. (1972: 268) The origin of the concept to be so translated is rather unimportant.
The notions we translate sometimes come from everyday language, as in instances when we classify people according to their intelligence or their happiness. Sometimes the concept is newly created by sensitive analysts: the extraverted person or the cohesive group. (Lazarsfeld 1972: 268)

This sensitivity, however, is accounted for in terms of everyday experience. The concept derived from this introspective sensitivity is referred to as a trait or intervening variable.

For instance, we experience anxiety, and its role in our own course of action (R). We observe how other people act in situations (S) which, we know, would bring on our anxieties; we notice that their reaction (R) is similar to ours. As a result, we file away in our minds that as a rule such a 'stimulus' S is likely to be followed by response R. We 'explain' such S-R sequences with the help of an intervening variable, anxiety. The value of this I.V. becomes particularly apparent if many S-R situations are observed where the S and the R vary, but where the same I.V. (anxiety) seems appropriate. We can then organize our observations in a somewhat more economical way: we remember the series of x situations which create anxiety and the series of y responses by which anxiety is expressed. Instead of registering x times y relationships of the S-R type, we need only remember (x+y) findings - the x prompters to, and the y indicators of anxiety. (Lazarsfeld 1966: 156-57)

This, in a nutshell, is Lazarsfeld's formulation of the problem of research in sociology. The move from sensitive introspection to inferential or dispositional concepts is the main point in research and is grounded in 'pragmatistic' assumptions. In two of the three of Lazarsfeld's works cited here we find the same reference to William James' The Meaning of Truth.
Suppose, e.g., that we say a man is 'prudent'. Concretely, that means that he takes out insurance, hedges in betting, looks before he leaps . . . As a constant habit in him, a permanent tone of character, it is somewhat convenient to call him prudent in abstraction from any one of his acts . . . There are peculiarities in his psycho-social system that make him act prudently. (James The Meaning of Truth, New York, Longmans, Green, 1909: 149-50 from Lazarsfeld 1966: 158-59 emphasis Lazarsfeld's)

The assumptions involved here are, firstly, that there are constant properties or traits 'in' individuals or groups and, secondly, that it is these traits or dispositions that make them act. Lazarsfeld's formulations seek an explanation of this 'black box' midway between stimulus and response.

Starting with the initial introspection, then, we move, in Lazarsfeld's scheme, through four stages which eventually brings us to a probabilistic delineation of the dispositional concept. In the 'initial imagery' stage different phenomena are seen by the introspective process to contain an underlying characteristic in common. "(T)he concept, when first created, is a vaguely conceived entity that makes the observed relations meaningful." (Lazarsfeld 1966: 187) In the 'concept specification' step the initial concept is broken down into components, aspects, dimensions. In this step "The concept is shown to consist of a complex combination of phenomena, rather than a single direct observation." (Lazarsfeld 1970: 13) Each phenomenon looked at which, in the introspective procedure, was ascribed the same underlying characteristic, is looked at anew to decide
what might be the aspects making up that underlying characteristic. When 'integration' is taken to be an underlying characteristic of communities, for example, and when the elementary units of social groups are seen to be norms and people, integration as an underlying characteristic is seen to have communicative, functional and normative dimensions. (Lazarsfeld 1970: 13)

The selection of indicators is made from the dimensions gained in the concept specification step. Lazarsfeld's reference to James is relevant here. The problem in James' example of prudence is to decide more precisely what it is about an individual that would entitle us to call him prudent.

James proceeds from an image to a series of indicators suggested directly by common experience. Actually one would not expect a 'prudent' man always to hedge in betting or to take out insurance on all possible risks; instead one would talk about the probability that he will perform a specific act as compared with a less prudent individual. And one would know that the appropriate indicators might vary considerably, depending on the social setting of the individual. (Lazarsfeld 1970: 13)

As an indication of the integration of a community, then, one would test the communicative, functional and normative dimensions of integration. Lazarsfeld suggests the measurement of the degree of communication between people, the degree of dependence on others in daily life, and the degree of conflict between norms, respectively, as indicators of integration. Since the setting (stimulus) is said to vary, one may speak only of the probability of a community being integrated which possesses certain of the properties chosen
as indicators.

The next step is that of the formation of indices or variates.

The fourth step is to put Humpty Dumpty together again. After the efficiency of a team or the intelligence of a boy has been divided into six dimensions and ten indicators have been selected for each dimension, we have to put them all together, because we cannot operate with all those dimensions and indicators separately. (Lazarsfeld 1966: 189)

This combination is achieved as follows: a large number of the objects under study is observed and described statistically with reference to each of the various indicators already developed. These descriptions and measurements are compared to depict the relationship of the indicators to each other. This also determines which sets of indicators tend to agree with one another. The matrices thus developed in the comparison are then analysed mathematically to determine the 'diagnostic value' of each indicator. (Lazarsfeld 1972: 269) The score of each object on each indicator is compared to its score on the total index to determine the predictive value of each indicator or set of indicators. Since the indicators are not checked against an outside criterion the classification is an 'intended' one. If friendliness is to be an indicator of group cohesiveness, for example, it is found to be so by comparison to an index which includes a measure of friendliness as a component. Lazarsfeld, however, does not even expect that, for any classification, an indicator may be found which is perfectly correlated with that classification. "Whatever
the empirical outcome, we know that there is only a probabilistic relation between the intended classification and the indicators." (Lazarsfeld 1972: 269) "One cannot say two sentences about classificatory procedures in the social sciences without introducing probability notions." (Lazarsfeld 1973: 272)

Thus, in the social sciences one-to-one relations can never be depicted as in the physical sciences with experimental control. "(M)asurement, classification and concept formation in the behavioral sciences exhibit special difficulties." (Lazarsfeld 1966: 144) But, "I obviously want to deny the unity of science as little as I would speak out for sin." (Lazarsfeld 1972: 275) Lazarsfeld's resolution of this possible contradiction is to state that the same logic and premises are applicable in the social and natural sciences but that relations in the social sciences may be stated only probabilistically. Lazarsfeld's ability to argue for this similarity hinges on the concepts 'latent' and 'manifest property space', 'disposition concept' and 'underlying' concept. This terminology, however, results in a reification; whereas Lazarsfeld argues that his research procedure takes us from the manifest to the latent property space, his perception of manifest data is conditioned by his introspectively developed conceptions defining the nature of the latent space. The categories used in perceiving 'data' are the parameters of the 'latent' space.
The most basic assumption underlying the procedure is indicated in the following passage:

If a trait is expressed by a variety of indicators, then these indicators are bound to be related to each other in a variety of ways. If upon repeated observations a person is seen to exhibit one indicator frequently, then the other indicators are also likely to be observed frequently; this is what is meant when authors talk about intra-individual covariance. But if we have observations on many people at one time we will expect also an inter-individual covariance; people exhibiting one indicator also will be more likely to exhibit all the others. (Lazarsfeld 1966: 163-64)

This assumption of regularity in the human world is given further assurance by an assumption of the ease of its perceptibility. Since indicators are seen to vary the regularity is then said to be underlying or latent. Lazarsfeld outlines his notion of property space by describing it as a Cartesian product. A number of dimensions or property classifications may be described and an object located in a 'property space' by reference to coordinates determined by the object's possession of properties pertinent to each of the dimensions. The distance between objects thus located may then be measured and similarities or differences thus determined. It is, however, the introspective conceptualization which makes this possible. The analytic sensitivity in which concepts are taken from daily life or invented for specific purposes lies at the beginning of this process.

Furthermore, since the classification is intended, Lazarsfeld successfully avoids the problem of establishing
sufficient external criteria against which measures and indicators may be checked but unsuccessfully claims concreteness and objectivity on behalf of the referents of his concepts. In the four-step research process, and especially in the first two steps, the direction given to the inquiry has its source in the decisions of the analyst. The initial ascription of properties to objects is a rather arbitrary decision and, as well, the formulation of indicators and the operationalization of concepts is said to be 'logical' or "one aspect is deduced from another, or empirically observed correlations between them are reported." (Lazarsfeld 1966: 188) It is, however, this very deduction or observation process which Lazarsfeld is supposed to be describing, but part of that description thus assumes an intuitive solution of that process. Lazarsfeld's argument thus appears tautological.

He uses the term 'disposition concept' or 'inferential concept' ostensibly to refer to a trait which an object may possess which may be inferred from systematic observation but in the description of the observation process the key turns out to be the initial 'logic' or 'correlatedness' of concepts, a logic itself unaccounted for in Lazarsfeld's papers. The purpose of research methods for him is to come as close as we can to laws or at least high-level generalizations, one necessary condition of which is the systematic elimination of nuances of history, situation and individual idiosyncracy.

While the disposition concept is supposed to summarize
observations it actually creates them. Lazarsfeld uses the example of the disposition concept 'magnetic' from the natural sciences. A magnetic personality is one which attracts others. Also, since behavioral science concepts are always probabilistic, we must specify further that a magnetic personality is one which is likely to attract others. To follow Lazarsfeld's procedure we would then develop indicators of attraction and check their covariance in order to assess the likelihood that particular personalities are 'magnetic'.

Although the disposition concept is developed first, Lazarsfeld maintains the following:

(T)raits, 'social facts', and 'disposition concepts' - are really special cases of classificatory characteristics. They have one thing in common: they are intended characteristics, that is, they are ways in which we want to organize a set of objects under investigation. This locating of 'objects' (individuals, groups, social relationships) cannot be done directly in the cases that we have discussed. We are dealing with latent characteristics in the sense that their parameters somehow must be derived from manifest observations. The terms 'manifest' and 'latent' have no other connotation here beyond the distinction between data directly accessible to the investigator (manifest) and parameters (latent) which in some way must be inferred from the manifest data.

The matter can be reformulated in the following way. Empirical observations locate our objects in a manifest property space. But this is not what we really are interested in. We want to know their location in a latent property space. Our problem is to infer this latent space from the manifest data, and this inference is identical with what before was described as the diagnostic procedure. (Lazarsfeld 1966: 104-85)

According to Lazarsfeld, this is more desirable because he wants to deal with more 'continuous variables', and data of
the 'manifest space' usually do not express these (1966: 185), and to be rid of 'accidental elements' (1966: 186).

The whole research process then, in Lazarsfeld's terms, appears to be a constantly narrowing process aimed at the most fundamental indicator or quality of an event or type of object. Another consideration of importance here, however, is that classifications are always made with specific 'intended purposes' in mind. Lazarsfeld's examples of intended purposes give us a clue to the kinds of purposes to which this method is amenable. As examples of indicators of the 'goodness of life' he cites "a low crime rate, large per capita contributions to community chests, and the use of the public library (1966: 165); a prudent man is one who controls himself (1966: 158-59); groups are to be characterized as to their cohesiveness, a study of 'state of occupancy' might be done on behalf of a housing administrator (183-84); we may want to measure the efficiency of a production team (188) or of a tank platoon (165); or we may want to decide which kinds of teachers are susceptible to McCarthy attacks (190-91). In general, the type of purpose to which this method is amenable may be stated as follows: "What will subjects of type (1) do under conditions (2) as the result of their experiences (3) ?" (1966: 148)

Furthermore, the person (subject) must be in some way typical with typical experiences and act in situations which are not 'accidental'.

The apparent interest here is the discovery of regularities and of the relationships between the properties of
objects in the social world. Lazarsfeld acknowledges that his classifications are for intended purposes. I wish to argue as well that the properties ascribed are not inherent properties of the objects studied but rather are themselves imposed as a result of the purpose behind the classification. We cannot say, after following Lazarsfeld's method, that cohesiveness is a property of groups found in varying degrees, or that efficiency, also in varying degrees is a property or quality of tank platoons, in themselves. Cohesiveness or efficiency become important concerns only when the purposes and interests directing research reflect an interest in cohesiveness or efficiency. They are categories for the conception and perception of the social world which are relevant for interests with degrees of cohesiveness and efficiency as an end or purpose. Thus it is not only the classification but also the introspection and diagnosis of the 'sensitive' analyst which are guided by specific purposes and interests. The essence or nature of social objects is not 'discovered' in this process but rather manipulated. The 'manifest data' from which Lazarsfeld claims to arrive at latent characteristics are constituted with reference to the intentions behind the classifications. What a college teacher is to someone interested in susceptibility to McCarthyist attacks is different from what a college teacher is to someone with different intentions. What a teacher is, in himself, cannot be discovered by Lazarsfeld's approach. In this way conception and perception always contain in themselves an end in view.
The end in view in the case of Lazarsfeld's methods, furthermore, becomes clearer in the examples he uses in explaining the stages of his method. The order and control evident in the theoretical world-views of Parsons, Schutz, Durkheim and Weber show up again in the self-control, housing administration, efficiency and cohesiveness of Lazarsfeld. The interest in order and control is further entrenched with the claim that 'latent parameters' can be ascertained by highly esteemed 'scientific' investigation conducted by experts.

Scott Greer

Scott Greer is interested also in uncovering 'latent parameters' and 'underlying structures' but recommends a method closer to strict hypothesis-testing than to Lazarsfeld's diagnostic procedure of classification. Greer maintains that the nature of things social is accessible through observation and sense-data but expresses caution about doing this 'naively'. Initially, at least, Greer rejects crude psychologism in his approach to inquiry thus avoiding the enigma of according truth to all perception.

So we obviously go far beyond the empirical evidence of our senses. We project from the immediate situation to other times and places, we anticipate and predict. And we do this by perceiving patterns in the world and assuming structures that underlie those patterns. In short, we process and organize the given sense-data. (Greer 1969: 30)

The problem, then, for Greer, becomes one of organizing the
sense-data truthfully. There is, in addition, the problem of grounding ways of seeing and the organization of the resulting pictures. The assumptions used in the solution to this problem are assumptions about and a definition of the object of knowledge, the social world. Thus, what is intended primarily as a set of principles concerning ways of looking turns out to be, in actuality, a set of principles defining what is to be seen.

We can state three major beliefs underlying the social sciences. First, there is a social world that conditions us and is not completely controllable by us. Second, it is a knowable world, a social fact. Finally, it is worth our while to know that world. None of these is self-evident; all are chosen options. (Greer 1969: 23)

With these cautions and these assumptions in mind, then, Greer goes on to describe how the production of accurate, properly organized pictures actually should proceed. He maintains that in order to abstract from sensory experience we already need concepts. There is no strict formula, according to Greer, for this abstraction but he mentions in general the kinds of grounds suitable for abstraction.

All discourse demands concepts. For discourse demands that we abstract, out of the whole stream of experience, limited aspects that are interesting and communicable through those symbols we call language. Science, as a variety of discourse, is even more demanding than most discourse. Then the question becomes: How do you abstract? What do you keep and what do you ignore? To be sure, everything is related to everything and all causes all, but this is unedifying even though correct. We must discriminate — that is, abstract.
There is absolutely no rule for abstraction. All that can be said is that we select our sense-data as we believe them to be interesting, pertinent to our purposes, relevant to our frame of reference. Thus a foreman's actions can be viewed as useful or not in the ongoing work of the plant; by his minister as clues to the state of his immortal soul; by a psychologist as a clue to his relations with his father; by a sociologist as indicative of the strains built into a social role halfway between management and the workers. The frame of reference, which highlights our interest and excludes other aspects of an event, determines the sense-data to which we attend. (Greer 1969: 31)

In general, then, the grounds for our abstraction are 'interest, pertinence to purposes, and relevance to frames of reference'. More specifically, the interest, purpose and relevance desired have to do with such things as the 'ongoing work of the plant', the states of souls', relations with fathers' and 'strains in social roles'. The interest, the abstraction process and the resulting picture must all be useful; useful, that is, with reference to an a priori picture of the social world as conditioning us, not completely controllable, knowable, factual and worth knowing. These purposes and procedures are then united in the following manner:

The picture of the world which the social scientist creates must work in (two) senses: it must have fidelity to the original, the social machine, and it must have clarity and communicability. His frame of reference demands hard facts in working order. (Greer 1969: 32)

This, however, creates a problem, a problem similar to our original one of distinguishing conceptual categories from facts. If our initial and central problem is the mutual constitution of category and fact and the resultant difficulty of distinguishing them, of what use is it, as a part of that
distinguishing procedure, to demand 'hard facts in working order'? Greer's answer to this problem is to say that hard facts are constituted by scientific frameworks.

But if our fact is created by our frame of reference, and that in turn derives from our group learning, our culture, where did the scientific frame come from? It is clearly not an inescapable one, for many societies never developed sciences. Yet we cannot have a scientific fact until we have a scientific framework for abstracting, out of all we can experience, that which is scientifically useful. (Greer 1969: 34)

A scientific framework demanding hard facts in working order, thus demands also also a culture in machine-like working order, in order for perceivable aspects of experience in that culture to be relevant to problems of strains in social roles and the ongoing work of the plant. The predictability of aspects of a culture demands a culture where predictability is important. The 'hardness' of facts depends on their scientific utility. Scientific utility depends on a culture which itself operates on a mechanistic world-view. Although he acknowledges that, "The hard fact is that all facts are in part intellectual constructs" (Greer 1969: 32), the hard fact, in distinction from other facts, is that fact which is in part a scientific construct.

Concerning meaning and experience in general, Greer maintains that "The natural history of psychological meaning is from sense-data to symbol to the individual's system of meaning to the resulting interpretation of experience", (Greer 1969: 42) and that this interpreting places the ex-
perience at a more general level in a larger context. It is
the concepts involved in the interpreting that Greer is
interested in. He wants to specify how concepts used in
various interpretations may have reference to actual experience
and hence have applicability in scientific frameworks.

The logical aspect of symbols inheres in social
communication among actors sharing a given con-
ceptual vocabulary. It refers not to the in-
dividual conceptions evoked by the symbol, but
to those concepts that are sharable and mean
approximately the same to all who speak the
language. In Langer's terms, 'That which all
adequate conceptions of an object must have in
common, is the concept of the object.' But we
must ask, adequate to what?

Concepts must be adequate to the individual
conceptions evoked, for one thing. For another,
they must be adequate to evoke conceptions having
a basic, formal similarity among individuals,
allowing communication; this is sometimes referred
to as intersubjective reliability.
(Greer 1969: 43)

This adequacy in terms of formal similarity is further elev-
ated when, given that a ground for science is the obtaining
of universal agreement about certain judgements, Greer main-
tains: "Such a ground for the value of science is sometimes
called 'intersubjective validity', the first term indicating
agreement, the second fidelity to experience." (Greer 1969:
109) Agreement about experience demands, in Greer's formu-
lation, uniformity of experience. If the natural history of
experience is from sense-data to symbol to meaning system
and if scientific concepts demand their universal reference
in experiential conceptions, then similar experience, for
purposes of validity and objectivity, is recommended. It is
first posited, however, that the social world is a machine. A recognizable situation, then, involving others should be capturable by evoking the commonly held concept.

Greer's view of inquiry, then, may be summarized as follows: facts are a combination of sense-data and ideational framework. Accurate or useful facts are scientific facts. Scientific facts are a combination of sense-data and scientific ideational frameworks. That which distinguishes scientific frameworks from others is scientific interest. Just what scientific interest is, however, is not explicitly stated.

The process of abstraction is, then, double-edged. It is extremely useful if it is well founded, if it corresponds with those aspects of the world in which we are interested. It allows us to avoid distraction by means of what is called 'partial analysis', and if what we are interested in is itself relatively free from distraction, we are in a good position to understand it. But there is a price; you have excluded parts of a whole, and if those parts you have excluded are important in your concerns then you have built in a major error. (Greer 1969: 73)

The unstated interest, concern or purpose, then, seems to be the major criterion in the formation of concept, theory, test. Sense-data are selected, concepts are formed and tests conducted with unstated purposes in mind. In the test, furthermore, more assumption is involved.

There is a considerable lack of fit between the conceptual realm and the spatio-temporal. We can conceptualize many things that never were, and the world of ongoing experience includes much of which we stand in ignorance. Hamlet was right, and our reversal of Hamlet equally right; there are more things on earth than in our philosophy, and more things in our philosophy than on earth. But the two realms come together
in that synthesis called experience. The given event is the harsh editor of our concepts, limiting those which are applicable. Thus the great epics of science, the 'crucial experiments', are occasions when the applicability of a concept is decided: the abstractive hierarchy proposes, events dispose. (Greer 1969: 78-9)

This formulation appears odd against the background of Greer's emphasis on scientific interest and concerns in deciding applicability. In this light, frameworks may just as easily be the harsh editors as events. Much work in the sociology and anthropology of religion suggests just the opposite (cf. Geertz, Bellah, Weber, Eliade, etc.). Greer's emphasis on utility, furthermore, suggests the recommendation of scientific frameworks as organizers of our experience. In then placing an emphasis on testing, Greer obfuscates this very organization of experience.

Theory and hypothesis testing, careful description of events (even though in commonsense terms) and the formulation of new theories fruitful of testable hypotheses, combine in the given inquiry. The critical distinction between exploration and verification is that between the formulation of hypotheses and their testing - the evidence for the generality of a law. (Greer 1969: 173)

Greer's distinction between exploration and verification, however locks him in a trap or a circle. Having previously asserted the importance of framework and interest in the constitution of fact, he goes on to suggest that conceptions in science may be tested against independent facts. Greer's position turns out to be very similar to Lundberg's. Independent facts exist for science but not for common sense. The kinds of purposes relevant to scientific frameworks and,
hence, relevant for testing by constituting independent fact, are scientific purposes common to all cultures having developed sciences. What scientific purposes are substantively, however, is never discussed explicitly but only hinted at by way of example. Agreement, verification, the work of the plant and strains in roles receive emphasis in a judgement of the kind of experience appropriate to our culture. For the scientist, however, in Greer's terms, the facts constituted in tests by scientific frameworks and purposes are said to be objective, having an existence apart from frameworks.

For the goal of science as an ideology is the construction of a theory that will imply all the facts of human experience. Objective fact is then the ultimate criterion; all crucial propositions are designed for the ordeal of factual test. Then from these considerations, it follows that all that cannot be tested is irrelevant to the truth. (Greer 1969: 51)

Truth, then, is also something which is constituted with reference to scientific interest if scientific interest is the distinguishing characteristic in the constitution of 'hard' fact. We are then recommended to experience in a way which is the shortest path to agreement and verification so that 'scientifically' interesting aspects of our lives may be calculated and predicted. The calculable and the predictable is that which is scientifically most useful and, hence, also the most objective, the most independent of our fancy.

Thus the methodological attempt to provide evidence
for an externally originating and binding conception of order and stability needs to employ also a metaphysic which assumes the existence of the order which it is designed to discover. The qualifications of observers, the concrete reference of scientific terms, the intersubjective consensus within a scientific community and the use of 'scientific interest' as ultimately constitutive of 'hard fact' presuppose answers to the questions which their formulation is designed to answer. The above formulations amount to a celebration of present day practices in science. Rather than an attempt to ground them they represent an invocation of them. 'Qualification' 'scientific terms', and 'scientific interest' are left undefined substantively. This relativization of the criteria of knowledge, validity and practicality says that what is is good.

Karl Popper

A philosopher who accepts and attempts to justify the above approaches to knowledge is Karl Popper. Popper is concerned that philosophers such as Plato and Hegel had epistemologies based on authority. (Popper 1968: 15-16) Instead of this Popper wants the world to tell us what it is. He has reservations, however, about assuming that the perception of sense-data results in knowledge.

He realizes and admits that concepts and theories are already employed in looking at the world and that ideas about
the world are not given unmediated.

In Bacon we have a similar doctrine. It might be described as the doctrine of *veracitas natura*, the truthfulness of Nature. Nature is an open book; he who reads it with an open mind cannot misread it. Only if his mind is prejudiced can he fall into error.

This last remark shows that the doctrine that truth is manifest creates the need to explain falsehood. Knowledge, the possession of truth, need not be explained. But how can we ever fall into error if truth is manifest. (Popper 1968: 7)

To avoid this problem Popper, like Greer, chooses to distinguish between framework and test. Frameworks or ideas may be employed regardless of their origin and are not justifiable or refutable with reference to their origin. To avoid the problem of basing knowledge on authority and of assuming that truth is manifest we need to set up means of testing ideas against reality, means which are independent of authority, assumptions and of the ideas to be tested. Thus for Popper validity is emphasized over origin, test over framework.

The way to validity, for Popper, however, is not verifiability but falsifiability. He criticizes those who claim that statements may be verified inductively. Rather than try to verify a proposition inductively by examining all possible events and objects referred to by that proposition (an impossibility at any rate) especially since a prior justification of the law of induction would also be in order to prevent an infinite regress of establishing the law for the establishment of laws, we should accept the logical falsifiability of a statement as the criterion of demarcation
between science and metaphysics. For a theory or proposition to be testable we must be able to imagine a state of affairs or situation with which that theory or proposition would conflict. Once this condition has been met, a theory may be called scientific. The next task is to attempt as hard as possible to find that state of affairs which would refute it. Once a theory or proposition has survived severe tests it may be accepted tentatively, as the closest approximation to the truth yet conceived. (Popper 1968: 228)

In order to avoid the infinite regress Popper hopes to admit statements into theoretical systems by relying on demarcation and falsification rather than on induction and verification.

If we wish to avoid the positivist's mistake of eliminating, by our criterion of demarcation, the theoretical systems of natural science, then we must choose a criterion that allows us to admit to the domain of empirical science even statements which cannot be verified.

But I shall certainly admit a system as empirical or scientific only if it is capable of being tested by experience. These considerations suggest that not the verifiability but the falsifiability of a system is to be taken as a criterion of demarcation. In other words, I shall not require of a scientific system that it should be capable of being singled out, once and for all, in a positive sense, but I shall require that its logical form shall be such that it can be singled out, by means of empirical tests, in a negative sense: it must be possible for an empirical scientific system to be refuted by experience. (Popper 1959: 40-41)

Popper's formulation thus far depends on two postulates: a correspondence theory of truth and the basis in experience of evidence which would refute a theory. He assumes that an
idea or proposition is a more or less accurate reflection of reality. A theory can thus be assessed by the degree of correspondence to the facts. (Popper 1968: 231-32) A statement with greater truth content, which says more about reality, thus risks more and is thus more susceptible to refutation and hence more scientific. If a statement with such a high truth content withstands severe tests it may be accepted (although again tentatively) as a good approximation to the truth; it possesses a high degree of verisimilitude.

Aside from problems in positing the metaphysic necessary to the correspondence view of truth, there remains the problem of the experience or observation which can refute a theory or a statement. If a true statement is one which corresponds with the facts, we still need a method of assessing the facts and, since truth is not manifest, according to Popper, observation itself becomes problematic. Popper takes our experience first of all to be of something called the 'real world'.

The task of formulating an acceptable definition of the idea of an 'empirical science' is not without its difficulties. Some of these arise from the fact that there must be many theoretical systems with a logical structure similar to the one which at any particular time is the accepted system of empirical science. This situation is sometimes described by saying that there is a great number - presumably an infinite number - of 'logically possible worlds'. Yet the system called 'empirical science' is intended to represent only one world: the 'real world' or the 'world of our experience'. (Popper 1959: 39)

Popper must also posit however, that this experience is always of the facts. He states also that a theory of knowledge,
a theory of science, a theory of empirical science and a
theory of experience all amount to the same thing. (Popper
1959: 39) Since, however, Popper rejects the notion of a
manifest truth and separates origin from validity, in order
to reject psychologism with reference to the origin of state-
ments and theories, he runs into trouble since he now needs
the givenness of facts for his testing procedures.

Thus there is no uninterpreted empirical basis; and the test statements which form the empirical
basis cannot be statements expressing uninterpreted
'data' (since no such data exist) but are, simply,
statements which state observable simple facts
about our physical environment. They are, of
course, facts interpreted in the light of
theories; they are soaked in theory as it were.
(Popper 1968: 387)

This statement thus appears to conflict with others
Popper makes in connection with the testing of theories. He
claims that although theories are our inventions they can be
falsified; our expectations can be countered; they "can
clash with something which we never made." (Popper 1972:
196-97) If the facts with which theories may conflict (and
theories are our inventions) are 'soaked in theory', then
the facts as well, are to a certain extent, our invention;
we have made them. Thus the independence of the test, so
necessary in Popper's formulation, seems to have disappeared
because the conditions for it conflict with his own critique
of grounding knowledge by reference to its origin in experience.

The criteria for knowledge, science and legitimate
experience turn out, for Popper, to be instrumental. Although
he claims that falsification is the method whereby statements
are deemed testable, his method is geared to the problem of
deciding when to accept a theory. Although he claims that
it is a method based on observation, there is nowhere in
Popper's writing a statement of how falsificationists ob-
serve differently from verificationists.

But we must be cautious if we formulate our
problem, with Hume, as one of the reasonableness
of our beliefs. We should split this problem
into three - our old problem of demarcation, or
of how to distinguish between science and
primitive magic; the problem of the rationality
of the scientific or critical procedure, and
the role of observation within it; and lastly
the problem of the rationality of our acceptance
of theories for scientific and for practical
purposes. (Popper 1968: 57)

To pose the problem as one of how to distinguish between
science and primitive magic presupposes that Popper already
knows the difference; and it is not at all clear why he wants
to do this in the first place (I suspect it is because he
wants to see magical experience as unempirical and unverifi-
able). As to the question of the rationality of scientific,
observational and acceptance procedures, Popper shows this
to be an instrumental rationality in connection with a critique
of essentialism.

This criticism of mine is thus frankly utilitarian,
and it might be described as instrumentalist; but
I am concerned here with a problem of method which
is always a problem of the fitness of means to
ends. (Popper 1968: 105fn.)

Which ends, is a question which Popper does not relish dealing
with. In his criterion of demarcation he devalues what he
terms irrefutable statements and theories. However, the
theories of Marx and Freud are deemed bad because (according
to the falsifiability criterion of demarcation) they are unscientific, but the rules of logic and inference (also unscientific, irrefutable) are deemed good because they are also deemed useful. (Popper 1968: 205) He criticizes vigorously theories which he does not like by showing them to be 'irrefutable' or 'unscientific' whereas the grounds for those theories or rules which he does like becomes their 'usefulness' - the question for what? or for whom? he does not attempt to answer.

Once a theory or idea is deemed logically falsifiable, then, the next task is to search for the set of facts which would refute it, thereby determining its degree of verisimilitude, or degree of correspondence with those facts. The character of the idea selected for testing thus determines the character of the facts to be sought. What is deemed problematic, or worthwhile investigating also defines the theory to be tested and hence also the nature of the information which is supposed to test the theory independently.

There is a point here which, I suggest, it is the particular task of the logician to analyse. 'Interest', or 'relevance' in the sense here intended, can be objectively analysed; it is relative to our problems; and it depends on the explanatory power, and thus on the content or improbability, of the information. The measures alluded to earlier . . . are precisely such measures as to take account of some relative content of the information - its content relative to a hypothesis or to a problem. (Popper 1968: 231)

Popper's work lacks discussion, however, of what constitutes the problem which begins this process. Thus, in
Popper's scheme, problems define interests, interests define theories, theories are tested against independent facts (although the independence of these facts is itself problematic since Popper himself claims that there is no unmediated knowledge). In his account of the origin of legitimate problems, Popper is close to Lundberg. He conceives of knowledge and life as an adjustment. Popper's metaphysic, epistemology, theory of science, politics and sociology become united through a quest for total objectivity, universality and regularity.

In Popper's cosmology there are three realms or 'worlds':

I will point out that, without taking the words 'world' or 'universe' too seriously, we may distinguish the following three worlds or universes: first, the world of physical objects or of physical states; secondly, the world of states of consciousness, or of mental states, or perhaps of behavioral dispositions to act; and thirdly, the world of objective contents of thought, especially of scientific and poetic thoughts and of works of art. (Popper 1972: 106)

Among the inmates of my 'third world' are, more especially theoretical systems; but inmates just as important are problems and problem situations. And I will argue that the most important inmates of this world are critical arguments, and what may be called - in analogy to a physical state or a state of consciousness - the state of a discussion or the state of a critical argument; and, of course the contents of journals, books and libraries. (Popper 1972: 107)

After stating that "the study of a largely autonomous third world of objective knowledge is of decisive importance for epistemology", (Popper 1972: 111) Popper goes on to describe the relations between the three worlds as follows: All our
actions in the first world are influenced by our second world grasp of the third world. (Popper 1972: 148-49) Although there is room in this notion for a human contribution to knowledge, the growth of language and hence knowledge, is an unintended consequence of our actions. (Popper 1972: 122)
The problem situation of the 'third world' defines the second world disposition to act which in turn defines the first world actions which (unconsciously) produces a new (third world) problem situation for, as Popper states:

To sum up, although the meaning of 'knowledge', like that of other words, is unimportant, it is important to distinguish between two different senses of the word.
1) Subjective knowledge which consists of certain inborn dispositions to act, and of their required modifications.
2) Objective knowledge, for example, scientific knowledge which consists of conjectural theories, open problems, problem situations and arguments. (Popper 1972: 121) (emphasis added)

Popper thus makes the keys to this process biology and the scientific tradition embodied in the 'third world', for, as he maintains,

The thesis of the existence of such a third world of problem situations may strike many as extremely metaphysical and dubious. But it can be defended by pointing out its biological analogue. (Popper 1972: 116)

Popper sees the natural and cultural worlds as regular, or, at least, that the assumption of regularity is methodologically necessary. (see Popper 1959: 61, 1968: 46, 130) This assumed regularity assures the biological and evolutionary nature of the process of acquiring knowledge. Since humans
do not consciously form even their cultural worlds, knowledge, in Popper's terms problem situations, are given to them, not created by them. "The autonomous world of the higher functions of language becomes the world of science." (Popper 1972: 121; emphasis added)

Tying together, then, considerations thus far dealt with, Popper develops the following formula: \( P_1 - TT - EE - P_2 \).

A problem situation into which we are born with a given inborn disposition with which to act leads to a tentative theory which we subject to severe tests by a process of error elimination the result of which is a well-tested conjecture forming a contribution to the third world thus leaving us with a new problem situation.

Even if we accept Popper's terms, the process of error elimination (EE) is a very problematic one. To begin with, his notion of error is based on a tautology; "The very idea of error, or of doubt (in its normal straightforward sense) implies the idea of an objective truth which we may fail to reach." (Popper 1968: 226) To realize, simply, that error implies truth, does not help us to recognize errors, nor does it provide criteria for our search for them. What constitutes an error is, furthermore, dependent on what is taken to be the problem situation. If the problem is not solved we have made an error. How, then, do we know when a problem has been solved? I shall return to this later.

For the moment, we are left with open problems and problem situations, given us by evolution and largely undefined, which determine the course of our knowledge and of our lives
for, as Popper says:

*Seen in this light, life is problem-solving and discovery - the discovery of new facts, of new possibilities by way of trying out possibilities conceived in our imagination. On the human level, this trying out is done almost entirely in the third world, by attempts to represent, in the theories of this third world, our first world, and perhaps our second world, more and more successfully; by trying to get nearer to the truth - to a fuller, a more complete, a more interesting, logically stronger and more relevant truth-relevant to our problems.* (Popper 1972: 148)

This again raises the question of what constitutes a problem and how we know it when we have it. Although Popper conceives of scientists as "workers who are adding to the growth of objective knowledge as masons work on a cathedral," (Popper 1972: 121) since we have no way of deciding what error or problem means, and since we have no sense of the meaning of our problems or our knowledge, we may be constructing not a cathedral but a tower of Babel if we follow Popper. The world of the human, or of mind, is simply a link between the other two (Popper 1972: 148) and understanding, Verstehen, is, for Popper, of theories, objects of world three, not of people. (Popper 1972: 52-53)

In his essay, "Of Clouds and Clocks", Popper shows his awareness of the problem of determinism created by his formulations thus far. This is the problem of how a scientist, if problems are given him and if Verstehen is of theories, can respond in ways determined by biology and evolution, and still know what problem he wants to work on and formulate solutions to it. Popper formulates this problem as one of
the indeterminateness of entities such as clouds as compared to the flawless functioning of machines like clocks. He places human beings somewhere in between but still employs his $P_1 - TT - EE - P_2$ formula as part of his solution. With the biological evolutionary perspective and the givenness of problems still in mind, then, Popper hopes to reconcile a deterministic, regular world, with an imaginative scientist. Popper develops the following analogy to formulate his solution to the problem of asserting the scientist's freedom:

If I am standing quietly, without making any movement, then... my muscles are constantly at work, contracting and relaxing in an almost random fashion, but controlled without my being aware of it, by error-elimination (EE) so that every little deviation from my posture is almost at once corrected. So I am kept standing, quietly, by more or less the same method by which an automatic pilot keeps an aircraft steadily on its course. (Popper 1972: 245)

So the growth of knowledge, as with the course of human life, must be kept on course even though we cannot know the destination. That it has a course is simply assumed by Popper. Since we have to wait for a new problem situation to arise from attempted solutions to an old one, which in turn determines, biologically and theoretically, our next orientation to the world and our next adjustment, we cannot know where we are going; just as we have no criteria for judging error, we cannot know whether we are on course or not.

Popper makes one further attempt to salvage a notion of the difference between scientists and other adjusting organisms. Criteria for the evaluation of problems or of
errors are absent here as well, however. He compares the actions of an amoeba with those of Einstein.

I admit that there is a difference: even though their methods of almost random or cloud-like trial and error movements are fundamentally not very different, there is a great difference in their attitudes towards error. Einstein, unlike the amoeba, consciously tried his best whenever a new solution occurred to him, to fault it and to detect an error in it: he approached his own solutions critically.

I believe that this consciously critical attitude towards his own ideas is the one really important difference between the method of Einstein and that of the amoeba. It made it possible for Einstein to reject, quickly, hundreds of hypotheses as inadequate before examining one or another hypothesis more carefully, if it appeared to be able to stand up to more serious criticism. (Popper 1972: 247)

The criteria for judging error, problems, and criticism are still extremely problematic for Popper, especially since humans remain unaware of the biological and third world processes in acquiring knowledge. It is contradictory to assert that problems and attitudes are given to us and that the scientist may self-consciously critically assess the worth of hypotheses, since the worth of hypotheses is relative to a problem, a problem which is simply given to us. The conscious criticism in Popper's scheme depends for its meaning on the nature of problems which remain undefined.

Thus Popper sees a world which is totally regular. The regularity of the world is assured in Popper's argument by assuming that people have little to do with the formation of knowledge, at least not consciously. In order to see the world as orderly and totally regular, knowledge must be seen
as emanating from the world itself. Popper thus asserts that the human contribution to objective knowledge is unintended, for, if humans could consciously formulate knowledge of their worlds, the certainty of universally valid, objective knowledge of the world could not be assumed simply by positing the world itself as totally regular. What science wants to see as eternal, objective and real, it must also see as necessarily beyond our control. Here rests a fundamental contradiction in this view of scientific inquiry. What science wants technologically to control in terms of instrumental activity must, in terms of gaining knowledge of it, be seen as beyond our control.

In order for knowledge to grow as Popper views it the world must remain essentially the same. If knowledge is to change the character of our thought and our action, then knowledge, thought and action cannot, in Popper's view, be considered as part of the world of which knowledge consists as greater approximation to an unchanging state of affairs. We now return to the question raised earlier about the interest and criteria employed in assessing what constitutes a problem, an error or a solution.

Nowhere in Popper's writings on the theory of science or epistemology does he formulate an idea of how genuine or fruitful problems are recognized nor does he explain why we should consider them important; it is stated simply that problems are given to us. That they are given us by the institution of science and not simply by the method is also clear since problem situations are inmates of the third world
which are to be found in journals and libraries. Popper thus sees science as an evolving tradition, the impetus and energy of which is contained in biologically determined responses to problem situations, the solutions to which set up the next problem situation.

Problems to be worked on in science, then, are provided by a scientific tradition. Popper wants to assure that this tradition develops rationally. In "Toward A Rational Theory of Tradition", Popper attempts to formulate the relations between science and society. Already in the introduction to the volume containing this article Popper asserts that there is a link between epistemology and politics, epistemology and society. That English-speaking peoples, Popper claims, are privileged to live in free societies, is a result of the parallel epistemological and political optimism resulting from the Renaissance. Modern science and technology were in turn given birth by this optimistic epistemology.

The birth of modern science and epistemology was inspired by this optimistic epistemology whose main spokesmen were Bacon and Descartes. They taught that there was no need for any man to appeal to authority in matters of truth because each man carries the sources of knowledge in himself; either in his power of sense-perception which he may use for the careful observation of nature, or in his power of intellectual intuition which he may use to distinguish truth from falsehood by refusing to accept any idea which is not clearly and distinctly perceived by the intellect.

Man can know: thus he can be free. This is the formula which explains the link between epistemological optimism and the ideas of liberalism.

This link is paralleled by the opposite link.
Disbelief in the power of human reason, in man's power to discern the truth, is almost invariably linked to distrust of man. Thus epistemological pessimism is linked, historically, with a doctrine of human depravity, and it tends to lead to the demand for the establishment of powerful authority which would save man from his folly and his wickedness. The contrast between epistemological pessimism and optimism may be said to be fundamentally the same as that between epistemological traditionalism and rationalism. (I am here using the latter term in its wider sense in which it is opposed to irrationalism, and in which it is opposed to irrationalism, and in which it covers not only Cartesian intellectualism, but empiricism also.) For we can interpret traditionalism as the belief that, in the absence of an objective and discernable truth, we are faced with the choice between accepting the authority of tradition and chaos; while rationalism has, of course, always claimed the right of reason and of empirical science to criticize, and to reject, any tradition, and any authority, as being based on sheer unreason or prejudice or accident. (Popper 1968: 5-6)

In order to view science as growing in an evolutionary manner, however, Popper himself has science grounded in something like tradition. The reason and the criticism alluded to are themselves, in Popper's formulation of the logic of science, dependent on solutions to problems which are already given to us. He attempts to overcome this problem by rationalizing tradition, by suggesting the replacement of the intolerance of tradition with the tradition of tolerance. (Popper 1968: 132)

Since tradition is a social phenomenon, says Popper, a theory of tradition must be a sociological theory. The task of social science, furthermore, is seen as that of combatting what Popper terms 'the conspiracy theory of society', the belief that everything which happens is the result of its being willed by those in power. After arguing that only when a
believer in conspiracy theory comes to power, such as Hitler, who created his own conspiracy to counteract his notion of the conspiracy myth of the Learned Elders of Zion, does a conspiracy theory appear to describe reality, Popper argues that even in conspiracy-run societies actions never result in a state of affairs exactly as intended. To explain why the unwanted consequences of action cannot be eliminated Popper takes to be the major task of social science. Given a market economy, for example, the placing of a house on the market by each seller, in addition to finding a buyer, has the unintended consequence of lowering the price of the house.

Popper then suggests that the explanation of the persistence of social institutions be done by an analysis, not of collectives, classes or groups, but of individual social actions and their intended and unintended consequences. He suggests analyzing the function of tradition in the same manner and pays particular attention to what he calls the 'rational or scientific tradition' in formulating a theory of tradition.

My main purpose will be to draw a parallel between, on the one side, the theories, after submitting them to scientific tests, we hold as a result of the rational or critical attitude — in the main, that is, scientific hypotheses — and the way they help us to orientate ourselves in this world; and, on the other side, beliefs, attitudes and traditions in general, and the way they may help us to orientate ourselves, especially in the social world. (Popper 1968: 126)

At this point Popper formulates the difference between myth and science as traditions by claiming that science as
opposed to myth adopts a critical attitude toward handed-down ideas and can thereby grow. Science grows, according to Popper, because a better and better account of the world is produced. Thus we need theories, traditions, and a critical attitude toward them in order to keep producing this better and better account.

As with theories in science, so with traditions in social life. Popper maintains, for example, that without 'something to go by' workers in a factory would become anxious and terrified. The workers in their environment, the factory, need to be able to predict what will happen, regardless of what it is that will happen; this is their greatest need.

It is here that the part played by tradition in social life becomes understandable. We should be anxious, terrified, and frustrated, and we could not live in the social world, did it not contain a considerable amount of order, a great number of regularities to which we can adjust ourselves. The mere existence of these regularities is perhaps more important than their peculiar merits or demerits. They are needed as regularities, and therefore handed on as traditions, whether or not they are in other respects rational or necessary or good or beautiful or what you will. There is a need for tradition in social life. (Popper 1968: 130-31)

Theories and traditions thus bring order into "the chaos in which we live so as to make it rational and predictable." (Popper 1968: 131) To produce a 'better' world (i.e., a more regular one) we must then take tradition as our starting point and frame of reference.

Popper then links theory and tradition to institution.
Institutions and traditions have much in common; among other things that they must be analyzed by the social sciences in terms of individual persons, their actions attitudes, beliefs, expectations, and interrelations. But we may say, perhaps, that we are inclined to speak of institutions whenever a (changing) body of people observe a certain set of norms or fulfill certain *prima facie* social functions (such as teaching, policing, or selling groceries) which serve certain *prima facie* social purposes (such as the propagation of knowledge, or protection from violence or starvation), while we speak of traditions mainly when we wish to describe a uniformity of people's attitudes or ways of behavior, or aims, or values, or tastes. Thus traditions are perhaps more closely bound up with persons and their likes and dislikes, their hopes and fears, than are institutions. They take, as it were, an intermediate place, in social theory, between persons and institutions. (Popper 1968: 133)

It is the task of social theory, then, to show where institutions are not fulfilling their 'proper' functions as a result of the unintended (and intended) consequences of individual actions. Our better and better account of the world, in this formulation, depends on placing closer and closer checks on our own behavior, and the production of order in the social world is best insured by placing institutions in the hands of people "who intend to use them for their proper social purpose." (Popper 1968: 134) How we come to know, or how Popper knows, what the proper social purpose or function of an institution is, is not formulated by Popper. The perceived regularity of the social world seems to be his only criteria for judging the quality of life and he goes even so far as to designate the purely descriptive and argumentative uses of language as its proper use as opposed to language's emotive uses. Discipline in the factory, teaching and policing
become not only the exercise of "prima facie" social purposes but the very conditions of scientific knowledge of the social for Popper.

In his essay, "Die Logik Der Sozialwissenschaften", Popper outlines twenty-seven theses on the logic of science, the last seven having to do specifically with the social sciences. He begins by suggesting that we have both an astonishing knowledge and a limitless ignorance of our world. (Popper 1969: 103) A theory of knowledge is supposed to explain the relationship between this knowledge and this ignorance. Popper begins to formulate his theory of knowledge by stating that to have knowledge we need a problem to be solved, and "a problem arises through the discovery of an apparent contradiction between our supposed knowledge and the supposed facts." (Popper 1969: 104)

The observation involved in the discovery of apparent contradiction is a problem-solving observation, an observation which contradicts our expectations. The expectations brought to the act of discovery have their origin in social problems such as poverty or political oppression. This leads to reflection and theorizing, to theoretical problems. The character and quality of the problem, claims Popper, determines the value of the scientific accomplishment. Although Popper himself makes the problem dependent on expectations, no substantive account of expectations is given.

At this point Popper outlines as his main thesis his conjecture and refutation theory of science (see pages 95-100
above). The conclusion of these considerations is that:

The so-called objectivity of science consists in the objectivity of the critical method; that is, however, above all, that no theory is exempted from criticism and that the logical aids of criticism — the categories of logical contradiction — are objective. (Popper 1969: 106)

The objectivity of the scientist is thus irrelevant for Popper. The objectivity of science lies only in the critical tradition which makes possible the criticism of regnant dogma. "It depends in part on a whole series of societal and political conditions which make this criticism possible." (Popper 1969: 112)

Popper takes the sociology of knowledge to task on this point. He claims that it mistakenly conceived the lack of objectivity of the scientist in terms of his societal position, whereas the objectivity of science, as distinguished from the scientist, depends on the use of social categories which it should be the task of the sociology of knowledge to explain.

(The theory of scientific objectivity) can only be explained through such social categories, as for example: competition (of individual scientists and of various schools); tradition (namely the critical tradition); social institution (as for example publication in various competing journals and through various competing publishers; discussions at congresses); state power (namely the political tolerance of free discussion). (Popper 1969: 113)

He then suggests dealing with the problem of value freedom in a similar manner. In a critical discussion a distinction is made between the question of the truth of a statement, its
relevance, meaning and interest for a scientific problem, and the question of its relevance, meaning and interest for an extrascientific problem. Popper states that it is impossible to exclude extrascientific interests from scientific research. The problem in science, according to Popper, is to exclude simply those extrascientific interests which do not contribute to the search for the truth.

What is possible and what is important and what gives science its special character is not the exclusion, but rather the distinction of every interest not belonging to the search for the truth from the purely scientific interest in the truth. However, although truth is the leading scientific value, it is not the only one: the relevance, interest and meaning of a claim relative to a purely scientific problem situation are likewise values of the first order, and the situation is similar with respect to fruitfulness, explanatory power, simplicity and precision.

In other words, there are purely scientific values and disvalues and extrascientific values and disvalues. And although it is impossible to keep scientific work free from extrascientific applications and evaluations, it is nonetheless the task of scientific criticism and scientific discussion, to struggle against the mixing of value spheres, and to exclude especially extrascientific evaluations from the question of truth. (Popper 1969: 113-14)

Because of these considerations on objectivity and value freedom, claims Popper, we cannot rob the scientist of his partisanship without robbing him also of his humanity. Objectivity and value freedom are in themselves values, scientific values contributing to the search for the truth. This apparent paradox disappears when the scientist attempts to prevent the mixing of scientific and extrascientific
questions of value. "The method of science", claims Popper, "consists in the selection of problems and in the criticism of our always 'trial and error' and tentative attempts at solution." (Popper 1969: 115)

It is precisely the selection of problems according to refutable expectations, however, which Popper cannot account for. That about which we are to seek the truth is decided extrascientifically, even if the appropriate societal and political conditions prevail. The formulation of a formal method for sociology thus presupposes a pre-ordained 'correct' selection of expectations and problems and also presupposes a complete sociology. The conditions, social conditions, about which Popper hopes to gain knowledge, he must already have a clear knowledge of. He must assume or know, among other things, the assumption of the institutionalization of various prima facie social functions and of a state which watches over the maintenance of free scientific discussion.

With Popper, as with Weber, the ends of human activity must already be given and accepted. In this way Popper is able to speak of analyzing a situation objectively. Human action is treated with reference to the givens of a situation and may be treated objectively since the situation is said to be an objective one, the same for all. Behavior may be analyzed objectively with respect to a situation, and a definition of institutions may objectively define situations in an institutional matrix. (Popper 1969: 121) As a concluding suggestion, Popper suggests that theoretical sociology,
his general 'situational logic' and his theory of institutions and traditions be accepted as defining the problems to be dealt with by social science. Thereby, claims Popper, although individuals and not institutions act, we will, through situational logic, be able to treat institutions as 'quasi-acting'; we would also thus be able to develop a theory of the formation and development of institutions from a theory of the desired and undesired institutional consequences of purposive action.

These formulations by Popper are based on one idea, the demarcation between science and metaphysics based on the criterion of falsifiability. Popper already employs a notion, however, of what he takes to be scientific. He criticizes other modes of demarcation such as meaningfulness, for example, on the grounds that we would then have to consider such things as rational theology or astrology as scientific. (Popper 1968: 253) The problems, furthermore, which constitute science must be given by the institutions which social science is to explain. In order for a social science to depict the regularities in a social world, it needs a totally regular social world. Decisions which make the theories of Marx and Freud useless and hence bad and the rules of logic and inference useful and hence good, instead of the other way around, are the same decisions deciding the suitability of evidence which can refute a hypothesis. The unaccounted-for expectations which may be countered in experience decide, in effect, our experience which is deemed legitimate in a social world
where discipline, tradition, regularity and the smooth functioning of institutions have priority. It becomes ideological to develop a methodology for discovery of processes in the social world when the development of that very methodology is predicated on an almost complete sociology, and myriad assumptions about the structures and relations in society. In order to view science as a self-correcting system, Popper needs an undefined, ungrounded notion of error. What is correct comes to be seen simply as that which science is doing. The interest in the problems science is working on is unaccounted for since that, as well, is seen as being beyond human control and as part of a self-correcting evolutionary process.

Thomas Kuhn

In The Structure of Scientific Revolutions, Thomas Kuhn argues that the employment of scientific method alone cannot account for the answers to questions which science has produced. Although science textbooks have made the development of a particular field appear to be totally cumulative, this has not been the case historically. Both Newton and Einstein, Priestley and Lavoissier, were using scientific methods and used essentially the same data. The arbitrariness of deciding what to consider as problem and, hence, as solution is ambiguous.
Observation and experience can and must drastically restrict the range of admissible scientific belief, else there would be no science. But they cannot alone determine a particular body of such belief. An apparently arbitrary element, compounded of personal and historical accident, is always a formative ingredient of the beliefs espoused by a given scientific community at a given time.

That element of arbitrariness does not, however, indicate that any scientific group could practice its trade without some set of received beliefs. Nor does it make less consequential the particular constellation to which the group, at a given time, is in fact committed. Effective research scarcely begins before a scientific community thinks it has acquired firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions? At least in the mature sciences, answers (or full substitutes for answers) to questions like these are firmly embedded in the educational initiation that prepares and licenses the student for professional practice. (Kuhn 1970c: 4-5)

Kuhn terms these sets of beliefs in each field 'paradigms' and characterizes them as being fully developed enough to attract the commitment of a scientific community and yet open-ended enough to leave puzzles and problems yet to be resolved. The practice of science, for Kuhn, consists primarily in the solving of these minute problems and puzzles, and he refers to it as 'normal science'.

After the development of Descartes' influential mechanical philosophy, for example, scientists took this philosophy as specifying both their metaphysic and their method. Since the mechanical philosophy asserted "that the universe was composed of microscopic corpuscles and that
natural phenomena could be explained in terms of corpuscular shape, size, motion, and interaction", (Kuhn 1970c: 41) scientists accepted as their metaphysic that the world was composed of shaped matter in motion and proceeded, methodologically, to reduce all natural phenomena to explanation in terms of corpuscular action. The activity within this puzzle-solving, normal science has three functions - "determination of significant fact, matching of facts with theory, and articulation of theory." (Kuhn 1970c: 34) In the process, then, of filling-out and articulating a particular paradigm through puzzle-solving activity (such as attempting to account for interplanetary gravitation as well as planet-sun attraction in determining the stability of orbits), objective facts are interpreted in the light of regnant theory and instruments used in puzzle-solving are constructed as though the theory to be tested were true. If asked whether a helium atom is a molecule or not a chemist will answer yes because it behaves like one with respect to the kinetic theory of gases and a physicist will answer no because it displays no molecular spectrum.

The impetus to scientific revolution, in Popper's terms, the production of a better account of the world, depends on the perception of an anomaly produced by work on a puzzle provided with reference to a dominant paradigm. The paradigm determines the puzzle to be worked on and, hence, any anomaly which may occur.* The problem deemed worthwhile

*This theme will not be developed here, see Kuhn 1970c Chapters 7 and 8.
working on gives rise itself to the kind of evidence (perceived somewhat accidentally, see Kuhn 1970c: 62-65) which might contradict or conflict with the paradigm. What is taken to be a problem, however, still determines the direction in the resolution of crises in science which are engendered by anomalies. We are again left with the same problem that Popper left us with—what are the criteria which may decide when a problem is worthwhile investigating? Popper claims that it is given to us by a 'third world' and by our biological evolution, and Kuhn attempts to show how, historically, in the practice of science, the conflict between communities holding to various paradigms typically does result in the communal acceptance of the priority of a given problem.

Kuhn (1970a-b) and Popper (1970) have entered into a debate on this issue. The result is that what Popper calls science Kuhn would term revolutionary science. Popper attempts to tell us what science should do (although often he attempts to say that this is actually done and Kuhn disagrees with him here), while Kuhn attempts to tell us what it does do. Both leave unexamined the criteria by which they judge science to be growing.

That science is a self-correcting system is explicitly held by Popper and implicitly by Kuhn. Popper attempts to account for this self-correction which keeps us on course by reference to the tradition of tolerance. Kuhn does some damage to this account in his historical consideration of resistance to discovery and the conflict between communities
of scientists.

Ideas remain entrenched because scientists need and build upon ideational frameworks. The scientist can never fully comply with the dictum of tolerance because he needs a grounded conceptual framework. Facetiously speaking, a scientist cannot be so open-minded, despite exhortations to the contrary, that his brains fall out! (Bennett 1968: 235)

In the case of the development of sociology, as Nisbet and others have argued, tolerance certainly was never a rallying cry. Nisbet argues that sociology developed as a conservative reaction to the French Revolution, the Industrial Revolution and the Enlightenment, and yet considered the metaphysic underlying this reaction as developed by Durkheim and others to have been developed into a practical methodology; for Nisbet, it suddenly became scientific, politically and morally neutral.

The metaphysic and world-view of externality and constraint which characterizes sociology is, however, a conservative world-view. This world-view characterized developments in other disciplines at the same period in history, in which the impracticality and impossibility of sudden, violent change was emphasized. Immanuel Velikovsky refers to this reaction as the 'doctrine of uniformity'. He points out that in the period from 1789-1815 Europe was in turmoil. Previous to this period well-known geologists such as Cuvier found anomalous the discovery of past catastrophies on earth in the form of heaps of the bones of animals thousands of miles from their natural habitat. They recognized that
catastrophes had happened but could offer no explanation as to their cause.

No wonder that in the climate of reaction to the eruptions of revolution and the Napoleonic Wars the theory of uniformity became popular and soon dominant in the natural sciences. According to this theory, the development of the surface of the globe has been going on through all the ages without any disturbances; the process of very slow change that we observe at present has been the only process of importance from the beginning. (Velikovsky 1955: 32)

The doctrine of uniformity, as developed by Charles Lyell, was to become a most important influence on Charles Darwin. I suggest also that what Nisbet cites as the conservative reaction of sociology to the same period, has resulted in what Alan Dawe has termed the doctrine of the problem of order.

Accepting the scientific problem as the problem of order, complete with a metaphysic of externality and constraint, accepting scientific problems in social science to be social problems given by institutions fulfilling their proper function, and arguing that the knowledge gained in such scientific practice is achieved without the aid of metaphysical assumption gives rise to a situation where science attempts to convince us that we have, naturally, no control over our own lives. The vigorousness of the polemic itself, however, is at least an indication that the opposite is possible. In the next two chapters I intend to explore that possibility with reference to a different formulation of knowledge and of science.
CHAPTER III

Positivism, Scientific Method, and the Interest in Domination

The Problem of Positivism

The general framework of the ideas presented in the last two chapters may be described in a word—positivism. Positivism is a normative attitude outlining for us, (1) what questions may reasonably be asked of our world, (2) rules and evaluative criteria for cognition and, (3) what can be known. The essential logical problem with this view is that one of its canons is that metaphysical viewpoints or questions are meaningless—or at least have no place in science—but at the same time its canons constitute a metaphysic.

Leszek Kolakowski (1969: 3-8) has condensed the canons of positivism and its various schools into four basic rules:

1) phenomenalism—one cannot make statements about entities not subject to experimental control, there is nothing beyond the phenomenon,
2) nominalism—the referents of general terms must always be concrete objects,
3) there is no cognitive value in value judgements and normative statements,
4) the unity of scientific method—the methods for acquiring knowledge are the same for all spheres of experience.

Anthony Giddens (1974: 2-3) condenses nominalism and phenomenalism into
the fundamental supposition of the experimental foundation of all (viable) knowledge in sensorily apprehended 'reality'. Secondly, as necessarily following from the first proposition, the idea that judgements of value have no empirical content of a sort which renders them accessible to any tests of their 'validity' in the light of experience. There is no kind of observation of the sensory environment which can have a direct bearing upon the content of value judgements or normative assertions.

It is interesting that Giddens places the words 'reality' and 'validity' in inverted commas. The use of the notion 'reality' in this context involves the notion of a realm apart from humans and not affected by their perception of it; the notion 'validity' in this context denotes the unchanging truth of statements about the realm of reality. Thus a valid proposition is a statement about an unchanging reality. In general, the conduct of scientific inquiry after this model expresses a concern for generality, testing, validity, the practical applicability of results, in short, for certainty.

It becomes evident, however, that theories do not simply describe reality when we view, for example, Popper's grounding of his approach to method in notions of practicality and utility. The notion of the validity of statements about reality is thus also dependent, contrary to other of Popper's statements, on a prior view of the uses or purposes of knowledge and of standards. The interests involved in the use of knowledge may also be involved in the process of validation of the appropriate form of knowledge.
(I)f one does not wish to enthrone philosophical innocence at any price the question must be permitted whether, through such a definition of the conditions of validation, the possible meaning of the empirical validity of statements has not been established in advance. And if this is the case, one might ask what interpretation of validity is thereby prejudiced. The basis of experience of the exact sciences is not independent of the standards which these sciences themselves attribute to experience. (Habermas 1974: 198)

The positivist view of knowledge might, then, aid simply in the constitution of a form of knowledge in the interest of those for whom such knowledge is useful.

Metaphysically this view expresses mechanism, epistemologically it expresses psychologism. Knowledge, then, is the result of the creation of images accurately reflecting patterns of shaped matter in motion. The key concept in this, as well as with Lundberg, Lazarsfeld, Greer, and Popper is testability. The centrality of this concern expresses a desire to ensure that an idea or notion accurately describes certain objects and the relations between them. Human knowledge, in this view, is the passive mirroring of a world divorced from a passive subject. In order for an idea to be valid that idea must be what all believe to be the case. This notion of validity, the interests behind it, and its implications constitute the central theme of this chapter. The concern for certainty expressed in this notion of validity poses the problem of intersubjectivity. There are essentially two ways of viewing intersubjectivity, in discussing the theory of knowledge. The first, the one often criticized in
this work, is the formulation of a procedure for verifiability; the second is the characterization of the world as initially intersubjectively constituted.

Because of the psychologistic orientations of many theories of knowledge and science the problem of intersubjectivity is encountered only when the question of verification is addressed. In this view the world is the brute reality of things in themselves. When viewing knowledge as the mirroring of a world in a subject, it is not considered that the world, to begin with, is constituted intersubjectively.

For both Descartes and Locke, ideas are the direct objects of man's knowledge, and this meant that the so-called 'critical problem' was formulated as the question about the reality in the 'outside world' of those things whose ideas were assumed to be present in the 'inner world'. (Luijpen 1969: 95)

In this view the notion that people, including philosophers and scientists, must deal with others, other minds, is left untouched until problems having to do with evidence and verification are encountered. Even in this view, then, there eventually arises the problem that the accuracy and conviction of the knower have something to do with the ability to convince others; that objectivity somehow depends on the conviction that if others look properly they too will see things in the same light.

The Phenomenological Approach to Knowledge

Phenomenology takes this 'proper looking' as its
starting point. It is by an investigation of the manner of looking or seeing that Husserl and others have arrived at the notion of intentionality. Intentionality, for Husserl, is not simply a bridge between subject and world as it was with Brentano, from whom he borrowed the term. For Husserl, intentionality does not in any way refer to a subject isolated form the world, but:

describes the subject-as-cogito -- knowledge itself -- as orientation-to and openness-to-the-world. Knowledge is not a matter of storing cognitive images in the subject's interiority, but the immediate presence of the subject as a kind of 'light' to a present reality. As a mode of being-man, human knowledge is a mode of being-existent, a mode of being-involved-in-the-world, and this being-involved is the subject himself. The subject, then, is not 'first' and in himself a kind of 'physical thing' which subsequently, by means of cognitive images, enters into relationship with physical things. Knowledge is not 'something in between two things in themselves' -- not a relationship between two different realities-- but is the subject himself involved in the world. (Luijpen 1969: 101-102)

Luijpen argues that Descartes raised merely a pseudo-problem in attempting to prove the existence of a real world. This problem could be raised only by an already fully constituted philosophy which knew what it could have knowledge of. Phenomenology starts by asking how knowledge actually occurs and in its notion of intentionality implies that knowledge simply is not what it is without the real world. Luijpen's reformulation of the problem is as follows: "One who takes the idea of intentionality seriously no longer asks whether the world which he 'sees' is real, but he can
ask whether he really 'sees' or merely dreams." (Luijpen 1969: 104)

The real in this formulation is still real; the difference is that it is no longer considered as something in itself. This represents the fundamental nature of the intentionality of consciousness. Previous philosophy has made the choice of concentrating either on consciousness or on reality, a dualism resulting in idealist-naturalist controversies. With the notion of intentionality, however, phenomenology is able to return to 'the things themselves' and to knowing as it actually occurs, in an examination of the point of contact of consciousness and reality. For Husserl, we cannot know one independently of the other.

To say that consciousness is intentional is to say that it contains something in itself as object. It is to an explication of these objects, to the 'what' of experience, that phenomenology is oriented.

When one approaches appearances or 'phenomena' in this way, one finds in them all that is necessary for the constitution of a strict science of what is.

It is in this sense that phenomenology is to be understood. An act of consciousness is that in which an object 'appears'; it is the appearance of an object. (Lauer 1958: 39)

From this beginning Husserl hoped to outline a program for the verification of cognitions, which could provide a ground for positive sciences. For him, there must be a concern with what things are, prior to a concern with how things act. The 'what' of things, essences, are their very intelligibility.
To say that one has grasped the essence of something is to say that one has grasped its meaning. Thus, for Husserl, essence and 'sense' are strictly identical. True knowledge of reality, then, is the knowledge of the sense of, the signification of, things. 

(The sense of things) is to be found precisely in consciousness itself, where admittedly significance is concentrated. (Lauer 1958: 21)

Even as early as The Philosophy of Arithmetic (1891) Husserl was concerned with the subjective source of concepts. As a mathematician he was concerned with the origin of numbers. He discovered that numbers as such are not perceived but that "there is a manner of perceiving connected with the operation of 'numbering'; so that there is an experience in which numbers are 'given'." (Lauer 1958: 23) With the notion of intentionality, Husserl binds together meaning, sense and essence.

If I want to determine what something is, I must turn to the experience in which the something is present to my consciousness; therein I will find an intentional structure, and that intentional structure properly analysed will reveal to me all that can be revealed with regard to the object toward which my experience is oriented. This structure of intentionality is the fundamental structure of any phenomenon; it is present to my consciousness prior to any reflection upon it, but in order to know what the experience of it is and thus to know what is experienced, I must penetrate into all the intentions which make up its structure, and I must do so in such a way as completely to validate these intentions as intentions of this object and of no other. To the extent that one has grasped any object as distinguished from any other, one has an 'essential' grasp of that object. (Lauer 1958: 42)

It is the essential intuition which Husserl wants to uncover. Genuine experience takes place in everyday life,
but the phenomenologist sorts it out, as it were, into genuine and non-genuine experiences of a given object; he distinguishes between mere signification and essential intuition. Husserl's theory of experience and intuition recognizes intentions as subjectively constituted but not arbitrary or conventional. By a proper analysis of intentions one may have an essential knowledge of an object, such that, "to have an essential knowledge of what one means by tree is to know what all others must mean by tree if they are to be objective." (Lauer 1958: 40) In this conception of knowledge, knowledge is not considered to be some accurate mirroring of an objective reality but rather reality is seen as objective when knowledge of it is true.

This brings us to conceptions of verification and validity. At first glance it appears to be a tautological formulation in which there are certain inviolable laws of experience in which objectivity is constituted. We then have simply to collect these objects constituted in the realm of naive consciousness and experience in order to have an essential grasp of objectivity and being. It is not, however, quite so simple and it is precisely this initial naivety which makes it so. It is within this naive realm of the Lebenswelt or life-world in which objectivity resides, in which the constitution of objects takes place. It is the task of phenomenology to see this naivety as such and to sort out the intentions and constitutions of the life-world.
We have now a situation in which a naive subject, because of the intentional, 'meaning', 'signifying' character of its consciousness, constitutes the realm of objectivity. Because this is done naively and in a pre-reflective, non-reflective manner, however, awareness or knowledge of the actual intentionally constituted objectivity is not yet attained. It is by an investigation of the subjectivity wherein objects are constituted that Husserl hoped to discover the essential laws of experience. He insists, furthermore, that it is in this subjectivity, as well, that these laws are constituted. Here Husserl identifies being and intelligibility making both depend on constitutive intentionality.

Now, if we take the sum total of objects, known or knowable, we have Husserl's notion of 'the world'; and if we take the sum total of subjective relations to this world we have his notion of 'transcendental subjectivity'. To know such a subjectivity adequately is to know the world to which it is related, which is to say, is to know the whole of being. (Lauer 1958: 79)

Every essence is meant because every essence is intentional. Its objectivity resides in the notion that it is based on 'laws' of meaning. In order for a world to have a sense for a subject, to be in any way known, it must be subjectively constituted. By phenomenological intentional analysis we may judge experience to discover precisely what has been constituted, a procedure which is impossible within the natural attitude or naive realm. This reflective act discovers the nature of the acts of the realm of the natural attitude. Consciousness is consciousness of something. Re-
Reflection is consciousness of consciousness. Naive consciousness is prior and is that wherein objectivity resides, but that objectivity can only be revealed by phenomenological analysis.

It is not the function of phenomenology to constitute an objectivity different from that which 'naive' consciousness intends; rather its function is to clarify what has already been naively intended by constituting and thus guaranteeing it in phenomenological intuition. Nor does this mean that pre-reflective consciousness is not constitutive, but only in reflection does it become manifest as such. (Lauer 1958: 88)

So it is a unity of sense that we are after, a unity which represents validity and truth. Husserl attempts to establish the priority of consciousness in this unity in stating that all real unities are unities of meaning.

If the concept of reality is derived from natural realities, from the unities of possible experience, then 'universe', 'Nature as a whole' means just so much as the totality of realities; but to identify the same with the totality of Being and therewith to make it absolute, is simply nonsense. An absolute reality is just as valid as a round square. Reality and world, here used, are just the titles for certain valid unities of meaning, namely, unities of 'meaning' related to certain organisations of pure absolute consciousness which dispense meaning and show forth its validity in certain essentially fixed, specific ways. (Husserl 1962: 153)

We are to analyse objects then which are the correlates of immanent intentional functions. Furthermore, we may analyse objectively itself by analysing the intentional function in which it is constituted. We have the object and we have the mode of consciousness in which the object is given. This
leaves us with a tripartite structure of ego - cogito - cogitatum or subject, act of consciousness, and object of consciousness. The object which is immediately present to consciousness is the point of departure for reflecting on the mode of consciousness in which it is given. In analysis, the object is not changed but is made objective.

We begin, then, with the ideal components of the object to get at the subjective structure of the act. The ideal components of the object Husserl called the noema and the subjective structure of the act he referred to as the noesis. The noesis is the intentional act looked at as a real subjective operation while the noema is the intentional act looked at as intentionally structured. As noetic the act gives sense; as noematic it contains an objective sense. Difference in acts of perception, for example, reveal differences in their objects but we start with the object since it specifies the guaranteeing act to be examined. All this is done with a view to being absolutely certain that we have grasped an object such that it cannot be otherwise. Knowing that we have accurately grasped, however, depends on still more. The consistency of the data of consciousness is a recurring issue. This consistency runs ultimately into the two-fold problem of an accurate knowledge of others and the need for others to establish consistency. Here we run squarely into the problem of intersubjectivity.

If, ..., one can describe one's 'intuition' in such a way that others recognize it as corresponding to their own, one has gone a long
way toward communicating the results -- Phenomenologically. (Lauer 1958: 97)

In fact, in speaking of knowledge it seems unavoidable that one mentions 'we' or 'us' at some point.

Based on the principle that the phenomenon is the only source of cognition to which we can appeal, phenomenology understood in this way becomes a systematic effort to transform the naive acceptance of a world into an essential knowledge of the world. This result will depend on the extent to which the subject is capable of seeing the world as the objective correlate of an a priori subjective operation. The world 'has its origin' in us... and it is in us that it acquires its habitual influence. This, then, is not a negation of a world-in-itself; it is simply the assertion that such a world cannot have a sense and, hence, cannot be in the full sense of the term. Only a world for us is, and it is only to the extent that it has been constituted in us. (Lauer 1958: 87-8)

Lauer points out a few difficulties with Husserl in this respect. His notion of objectivity is somewhat arbitrary to begin with and is ahistorical. Also, although he deals with the problem of intersubjectivity more than a lot of other philosophers, he has disregarded the necessity of actual dialogue in the establishment of a common meaning.* It may be that he is simply clarifying what he means by a given object, rather than what everyone must mean. Even if Husserl could have dealt with these problems, there still remain others involved in his formulation as far as he has gone.

We have a situation now in which the world is objective and

*"This obviously admits of degrees; no one need know me as I know myself. Still, one constitution cannot contradict another." (Lauer 1967: 169fn.)
essentially constituted by and in us. We are constituted as well in the same process. Here, however, is the problem. We are constituted, and we constitute? For each subject, then, the world, including the others involved in the we, is constituted intentionally. In any case we have at least a multiplicity of subjects. Lauer outlines the problems resulting from this situation:

1) Each subject must be self-constituted, else it can have no significance in a phenomenological framework.
2) Each subject must be constituted as such (either individually or collectively) in each other subject or the result will be a completely monadological universe, where communication is impossible.
3) The constitution of the other must correspond to the other's self-constitution, else it will be invalid; and my constitution of self must correspond to other's constitution of me else I will be myself and not myself.
4) Each must constitute a world of objectivity which is in some sense identical with the world constituted by the others, or there will be no common ground for communication.
5) The world which each one constitutes must be a world comprising oneself and others, else the unity of the world will be destroyed, . . . .

(Lauer 1967: 169)

So we have a subject constituting a world of objects including itself. In this world, some of the objects are constituted also as subjects who in turn constitute each other and the rest of their world(s), at least to a great degree, in the same manner. The key here is intersubjective constitution in which an object can be constituted both as an object and as a subject. The concept of objective validity in any orientation ultimately depends on its being binding on all possible subjects so we must account for the constitu-
tion of these other subjects. There are now two principle difficulties; to account for the constitution of an object as a subject, as also constituting, and the correspondence between the other's self-constitution and my constitution of himself, or that two subjects constitute worlds which are essentially similar, which should amount to the same thing.

Somehow, then, we must show that we can experience the other as experiencing since to be a subject means to experience. There must be an intentional experience which has the experiences of others as its object. Husserl hoped to solve both difficulties with his notion of Einfühlung or sympathy and thereby find a constituted world which will be valid for all subjects. Without going deeply into Husserl's further development of his treatment of intersubjectivity we can outline some implications from what has been said so far; we can discern the line which is being taken.

Absolutely certain knowledge is desired. Knowledge is a matter of meant essence. Meant essence is subjectively constituted. It must be so constituted by at least a multiplicity of subjects, subjects who are then at least capable of seeing it as so constituted. "No cognition could with reason be called objective - and hence valid - unless it be a cognition effectively the same for all possible subjects." (Lauer 1967: 178) We have what appears to be the following situation: the acquisition and verification of knowledge depend on a multiplicity of subjects seeing, having, and living in the same world. Husserl may be criticised on
epistemological grounds for contriving this sameness in order to justify his search for absolute certainty. He must be given credit, however, for being one of the first to attempt an explanation of subjects as well as objects, since all philosophy and science must eventually either presuppose or deal with it.

**Intersubjectivity and Objectivity**

I submit that Husserl has successfully taken us to the point where we can speak of the problem of the other in a variety of relevant frameworks. As Lauer points out,

There is nevertheless even some justification in Husserl's contention that there is here an approach to the problematic of existence. In explicating the 'sense' of the other, which is already contained implicitly in the very concept of an objectivity which must be equally valid for all possible subjects, the theory of intersubjectivity recognizes that the other must be a 'real' subject if objectivity itself is to have any 'sense' at all. Science, after all, can have no recognizable validity if its contents are verifiable only for one subject, even though that subject be convinced that it is the representative of subjectivity as such. If nothing else it should be possible to show how knowledge could be communicable to others, on the mere supposition that there are others. Furthermore, if the 'science' of philosophy is to be the task of a community of scholars imbued with the same ideal and employing the same method, then this community of scholars must be more than a vague generalization. (Lauer 1967: 179)

How far can we now go in explicating the 'sense' of the other? To start with we have the animated body of the subject, the psychological subject of objectifying operations, and the body of the other, considered neither as animated or
inanimate. My animated body is for me an object in the world like no other; it is not simply a body. My body and its animation are present to me, are given, in every experience. Once 'I' can be said to be an individual we will have evidence for other individuals.

(Just as phenomenological interpretation of the world is a constitution of the evidence in which the world is given, so too a phenomenological interpretation of the other will be a constitution of a world in which there are other subjects. Thus the evidence of self as an individual will be the same evidence in which other individuals are given. . . . (T)he proper subject is first given vaguely as subject in general and then objectified as individual; the other is first given as a sort of object in general and then subjectified as individual. (Lauer 1967: 174-75)

We perceive the other's body as an object and further as an animated body since, by its behavior, we perceive it as similar to our own bodies. Thus it is also an ego having its own world. Since our own experiences are made up of 'heres' and 'theres' and 'nows' and 'thens' in which a given object is constituted, we can see the other as occupying a 'there' and as having a similar experience. Now we come to the biggest problem of all in this line of reasoning:

Once another subject is recognized, however vaguely, as having experiences similar to one's own of a world which is also one's own world, the step to recognition of the world as object of a common constitution is not a long one, though, what a 'common constitution' could mean must remain vague. What is more, this raises a further difficulty with regard to the constitution of the other subjectivity. As subjectivity it must certainly be self-constituted, and as individual subject it must be objectively constituted. Now, for me it is constituted as 'there'
whereas for itself it is constituted as 'here';
which is to say, it is not constituted in both
cases as absolutely identical, since 'here' and
'there' are modes of corporeity sufficient to
distinguish bodies and, hence, subjects.
Husserl's answer is that corporeal nature is
commonly constituted with two distinct modalities
whereby there are two subjects. This may seem
insignificant, but it is enough to indicate that
common constitution stops at a certain generality;
partialization involves a differentiation
introduced by individual subjects. It may be
that two subjects experience things (or some
things) in exactly the same way, but there is
no way of knowing that this agreement is anything
but general. (Lauer 1967: 176)

The problem of the other's existence, for Lauer and
Husserl, now bears strong resemblance to Descartes' problem
of the world. The identity of worlds is not a problem which
arises from an analysis of intentional structures. It can
only be asked when we assume that knowledge of others is, at
least to some degree, possible. Sheer otherness would indicate
a lack of commonality. It would seem that there is little
ground for thinking that agreement is even general without
first positing commonality. It is one thing to arrive at
the conclusion that each of us takes for granted that our
world is a public and intersubjective one. It is quite another
to assume from this that we have the same world or that the
contents of our worlds must to some extent be identical.

Existential phenomenology approaches this issue from
the standpoint of the subject's existence. In this view,
that which characterizes a commonality in perception and
meaning is not simply the biologically and cognitively based
capability to view from similar vantage points but the very
presence of the other in the subject's existence-as-cognito.
"It is I who perceive, but the perceiving I only is what it is because the behavior and speech of others are present in my existence-as-cognito." (Luijpen 1969: 264) In this view existence is co-existence since my being is a being through others. The meanings upon which our action is based have been established by others.

It is evident that the cultural world in which I am involved is a system of meanings established by others. But the proper reason why I call my existence co-existence, why I must say that the others are present in my existence, so that my existence must be described as a being-through-others, lies in the fact that others make me participate in the cultural world through their behavior and their speech. The proper meaning of the thesis that existence is co-existence lies in the fact that others make me be, so that my being is a being-through-others. (Luijpen 1969: 266-7)

In saying that existence is co-existence we are implying the primacy of a totality of the human. The very terms we use to describe persons are meaningful only in relation to others; a mother is a mother through her children, a man is a smoker through other smokers.

The realization that individual existence cannot reach a level of authenticity unless existence embodies itself in forms of co-existence is the same as the observation of positive sociologists that the individual man is always found as already incorporated in certain groups, which are strongly determinant in his respect. (Luijpen 1969: 268)

The taken-for-grantedness of our world in a situation in which our typifications form a socially derived and distributed stock of knowledge results in certain standardized ways of doing things. "This incorporation implies that the group makes
the individual existence think, act, and be, in accordance with the group's patterns." (Luijpen 1969: 269) Luijpen, however, as distinguished from Schutz, states that this is an indispensible condition for authentic personal existence. He faces, here, head on the tension between subjectivity and social determination. He then asks the question, "Is it still possible to speak of the 'person' and the 'subject' if one takes seriously the unmistakable reality that we make one another be?" (Luijpen 1969: 269) In and through my togetherness with others, attitudes and meanings, orientations to action, become sedimented in me. The social facticity produced by this sedimentation Luijpen calls "my social body".

Luijpen also argues, however, that this is not strictly a process as the influence of one thing on another is a process, since although the body referred to is a social body it is still 'my' body. The social body cannot be accounted for by deterministic causes. A sociologism which argues for complete determination of individual existence disregards and ultimately eliminates the importance of the subject. Luijpen's argument is that it is this sociality which makes human thinking and acting possible but the individual's social body is not simply a result of group pressure. Sociality, making one another be, is prerequisite for action but is not totally determinant. "There is no contradiction between the subject and the social body, but there is a unity of reciprocal implication." (Luijpen 1969: 271) There remains something of the person which cannot be accounted for in speaking of role, for example.
"I want to grasp my role, not only to exist materially, but rather also to become myself; I know myself only in it, but am not identical with it." (Luijpen 1969: from Karl Jaspers Philosophie 320 translation mine)

A clear basis for rejecting the sociologistic position becomes apparent when we consider that if action were simply the result of sedimentation change would be impossible, new meaning would never arise. Not only, then, does individual existence need the social body but the social body needs the spontaneity and creativity of the subject, the subjectivity which constitutes it in the first place. The individual, then, cannot be identified with the social body.

The subject's non-identity with his social body makes it possible for him to distance himself from, or to consent to, his social body. This consent keeps the social body alive. If the subject is no longer able or willing to give his consent because the spontaneity of his subjectivity no longer finds support in his social body, then this body begins to degenerate. The patterns of group life do not have the stability of a rock. (Luijpen 1969: 272)

Luijpen would argue, with Schutz, that the other is accessible to me primarily through taken-for-granted meanings of everyday life. Luijpen, however, does not attempt systematic, pure theorizing from this basis, at the expense of other possible considerations. We still can have access to the other's subjectivity even though we do not directly see his subjectivity; we can see him as a subject, as not-a-thing. It is not by analogy to my visible behavior that we have access to another's subjectivity. To speak of behavior
as expressive of subjectivity we have to assume the subjectivity of the other. The very term 'expressive' implies subjectivity. We cannot, then, separate body and mind and then work by analogy to establish the existence of mind.

The body, however, is still the key to the solution. If the separation between subject and body is undone, one can understand that in the look, gesture, attitude and work of the other I really encounter the other as subject. The other's body is 'his body'. The other lives 'in person' in his look, his gesture, his attitude and his word. Thus I encounter the other as the other, as a subject when he looks at me with love, hatred or indifference; when he makes a gesture toward me, for his bodily form is the embodiment of his subjectivity. (Luijpen 1969: 280)

We could say I am a body, or I have a body. I am a body is a contradiction because if I were a body, that would deny the 'I', the subject.

I am a subject and I have a car. But with respect to 'my body' neither 'being' nor 'having' can be affirmed without qualification. 'My body' lies precisely 'midway' between these two, and to this extent can one say that the body acts as an 'intermediary' in the encounter between human beings. (Luijpen 1969: 281)

Since the body has this intermediary character in the encounter between human beings there is a non-identity of subject and body and a certain distance between subject and world. Also through the body, the other may disclose or conceal himself. In acknowledging the possibility of concealment we are also thereby affirming unconcealment of, and access to, the other. In being the transition from subject to world, the body, thus, provides access to the world of the
other. Encountering, being with, and watching someone is the means of access to his complex of meanings, his world. Because of this encounter, the presence of the other to me as an origin of meaning, we can now say that the other accompanies me; there is a 'we'. Others are "those among whom I also am." (Luijpen 1969: 282) The presentation of the other is different from the presentation of a thing.

We now have an existence which is the unity of the reciprocal implication of subjectivity and social body. This social body is the result of the quasi-process, the way of doing things, which is carried by others. With the notion of accompanying we add the dimension of personal encounter to this quasi-process.

The reception and carrying of a 'social body' as a quasi-effect of a 'way of doing things' lies far less on the level of the personal 'encounter' with, and the 'presence' to the other as other than does the mutual 'accompanying' with which we are now concerned. (Luijpen 1969: 282-3)

In this conception the other is 'like-me-in-the-world' and not a thing. He is no longer a receptacle for sedimentation. Sociology can describe various modes of accompanying one another, the different forms of the 'we'.

From this point, one may continue on one of two paths. We might emphasize the interlocking of worlds and meanings with a view to efficiency and certainty in absolutizing an aspect of human relationships. We could also, however, with Luijpen, emphasize the human, spontaneous aspect of the human without forgetting what Luijpen has termed the quasi-
effect. He argues that humanness can be made evident and it is this humanness which should be given priority in considering relationships.

All this indicates that the pluriformity of accompanying one another lies on different levels. We realize that, in no matter which sociological form of co-existence, we always either approach or draw away from an ideal of mutual companionship which is, at the same time, an ideal of authentic humanity. If in a labor organization all functionaries are perfectly attuned to one another, so that the goal of the organization is realized, one could -- perhaps -- say that, sociologically speaking, there is here a perfect form of accompanying one another. But at the same time, it is possible and even probable that these sociologically perfect human relations are inhuman.

(Luijpen 1969: 285)

In the suggestion that the choice for a basis for access to the social is a matter of seeing the relationship of subject and other as either a relationship between minds or between machines we are still totally within a positivistic framework; no alternative has been suggested in this choice. Both sides in this false dichotomy would then proceed to posit a similar kind of connection between mind and machine by analogy. In both cases the analogy presupposes intersubjectivity. The very fact that empathy or verstehen is used as a technique of access to people instead of alarm clocks is evidence of this.

The problem of the verification of cognitions, or theories, in evading the problem of intersubjectivity, specifies assumptions about the relationship between physics and psychology in a somewhat Lockean manner. Frederick Kersten,
following Aron Gurwitsch, has called this the constancy hypothesis.

The constancy hypothesis may be considered the first attempt to establish a simple relationship between the stimulation of sense-organs, on the one hand, and, on the other, both the aroused physiological processes and the concomitant sensations. (Aron Gurwitsch The Field of Consciousness Pittsburgh 1964, quoted from Kersten 1972; 524)

This scheme neglects what Kersten calls "the irreducible ambiguity of consciousness." (Kersten 1972; 527 ff.)

Consciousness is ambiguous since conscious acts in the world depend on and are, thus, in a sense, effects of facts and events, but it is also constitutive of facts and events upon which it may be causally dependent.

In other words the ambiguity of consciousness consists not only in the fact that it is both in and of the world but that it is in the world by virtue of being of the world. Stated differently: in the world, consciousness and its objects are related not only as, for instance, perceiving and perceived purely as intended to but are related also as being objectively related objects in time. The two relationships must not, however, be regarded as analogous; and since consciousness discovers itself in and of the world only insofar as it is consciousness of the world, the latter is not only fundamental and characterized by unique priority but is also sui generis. To regard the two relationships as analogous, or to confuse the one with the other, suppresses or even subverts the essential ambiguity of consciousness and willfully distorts any scientific interpretation of the world. (Kersten 1972: 527-8)

Circumventing this problem by means of the constancy hypothesis ran into problems already in psychology. In psychology the constancy hypothesis should work as follows: for every change in sense datum there should be a concomitant
change in physiological process and, hence, cognition. The fact that coal looks black in the sun and in the shade causes problems for this view. One has problems maintaining that we do not 'really' see coal as black in the sun. Were we to conclude, finally, that what we perceive is an 'illusion', the fact must still be accounted for that the 'illusion' is such only with reference to a physical system constructed by the psychologist in which we perceive what we should. Hence it is not a question of knowing whether or not we perceive the real such as it is...; since precisely the real is what we perceive. It is just this which an explanation conforming to the natural attitude cannot account for as an essential feature of ourselves exposed to the world. Only by substituting the system of stimuli and sense data for what we perceive is it possible then to 'translate' one frame of reference - daily life - into another - the psychologist's - with regard to which daily life is not what it should be. (Kersten 1972: 531-2)

Similarly in sociology Durkheim's study of totemism led him to see the covariance of ritual with solidarity as evidence that what people 'really' worship is the social order itself. Only a preconceived notion of the origin of institutions allows Durkheim to come to such conclusions. He goes on to suggest that since the social order is worshipped anyway, this is what people should worship.

Whatever the criticisms that may be made of Durkheim's sociology and its method, the sociological systems substituted for the natural attitude's conception of man in relation to fellow man yield a primacy of sociology and sociological theory where, e.g., scientific belief turns out to be what religious belief should be. But that scientific belief belies that very origin it suppresses under the specifying assumption of the constancy hypothesis. This reduction of what people 'know' as 'reality' to the capacity to believe, transforms a concern with what people 'know' into a
concern for what people 'know' in such a way that what is 'real' for members of society is replaced by an underlying 'collectivity' constructed by scientific thinking.
(Kersten 1972: 537)

The constitution of the world has presentational and appresentational aspects. In looking at a house-facade, for example, what is presented is the facade; it is appresented as 'house' through the subject's filling-in other aspects. In the case of a house the other aspects are not presented but are presentable; we can walk around it. In the case of the other, however, this is not possible. The taken-for-granted consistency of presentation is more problematic in connection with the other.

(I)t has never been recognized that the otherness of 'someone else' becomes extended to the whole world, as its 'Objectivity', giving it this sense in the first place! Other minds are not like mine; the appresentative nonpresentation of other minds signifies precisely that pure otherness, sheer inaccessibility, stands in rigorous harmony with the appresentational presentation of a notoriously ambiguous physical thing: the body of the other. Indeed, that very ambiguity allows for the harmony in the first place. In virtue of the harmonious synthesis, however, there is continuous coordination—through continuous fulfillment of expectation in the way of 'behavior'—of my world, the first meaning of objectivity. There would be no 'our' world for us, hence no objectivity whatever, were there not the mutual experience of the utterly alien and inaccessible as such in concrete harmony with the epicene presentational-appresentational access to the surrounding world. As it were, we are enrolled in our lives together; the world, the objective world, is intersubjective and not merely a plurality of others. . . . Under the specifying assumption of the constancy hypothesis the perceptual situation is ignored, both as to its presentational status and as to the appresentative nonpresentational core the perceptual situation contains. Because of this methodological
ignorance, intersubjectivity, as far as the constancy hypothesis is concerned, at best gets added onto the world as a supervenient factor. (Kersten 1972: 561-2)

The Philosophical and Historical Origins of Scientific Method and the Logic of Domination

We now have, as it were, polarized aspects of others, otherness and typicality. The interest in viewing natural and social phenomena simply in their typicality has its origin in the scientific world-view which was developed between the thirteenth and seventeenth centuries. What appears on the surface as a continuous development from Greek to modern philosophy and science actually represents the setting of a new task. The setting of the task of formulating a universal science was new in principle; it was unknown to the ancients. What is new since the dawn of the modern period is the idea that the infinite totality of what is in general is intrinsically a rational all-encompassing unity that can be mastered without anything left over by a corresponding universal science. Long before this idea comes to maturity, it determines further developments as an unclear or half-clear presentiment. In any case it does not stop with the new mathematics. Its rationalism soon overtakes natural science and creates for it the completely new idea of mathematical natural science -- Galilean science, as it was rightly called for a long time. As soon as the latter begins to move toward successful realization, the idea of philosophy in general (as the science of the universe, of all that is) is transformed. (Husserl 1970: 22-3)

With Galileo, then, what was once an assumed correspondence between the ideal and the real was forcibly ensured
by idealizing nature itself. In the interest of exact measurement nature was mathematized. There developed an art of measuring according to abstract shapes, which art determined the world view for the verification of those shapes and their interrelations as objectively valid. This represents the general character of the mode of intentionality which became the modern one.

Taking, now, the notions of life-world and intentionality as described earlier, we have an everyday life-and-death world, constituted intersubjectively by its participants, which constitution reflects the practical aims of those participants. It is a world of human action and project, of significance for such action and project, a world of colors, sounds and meaning. In ancient philosophy and science it was this practice, these projects which were made thematic.

In modern science, however, with its mathematical-mechanistic world-view, the projects and possibilities which may be entertained are limited to those approachable by means of a scheme which views the world in terms of matter of specific shapes and the mathematically conceived relations between those shapes. As the mathematical-mechanistic world-view, with its project of measurement, becomes incorporated into the life-world, however, a new mode of intentionality or new life-world is created which has implications for human practice.

In place of real praxis - that of action or that of considering empirical possibilities having to do with actual and really (i.e., physically) possible empirical bodies - we now have an ideal praxis of 'pure thinking' which remains exclusively within the realm of pure limit shapes. Through a method of idealization and construction which
historically has long since been worked out and can be practised intersubjectively in a community these limit-shapes have become acquired tools that can be used habitually and can always be applied to something new - an infinite and yet self-enclosed world of ideal objects as a field for study. Like all cultural acquisitions which arise out of human accomplishment, they remain objectively knowable and available without requiring that the formulation of their meaning be repeatedly and explicitly renewed. On the basis of sensible embodiment, e.g., in speech and writing, they are simply apperceptively grasped and dealt with in our operations. (Husserl 1970: 26)

Thus out of a specific interest and project arising from a particular life-world we have an idealized construction as reflection of a theoretical-logical praxis. (Husserl 1970: 129 ff.) Once an abstracted view of nature comes to occupy the general status of a mode of intentionality, of a life-world, its further development is ensured. The mathematical-mechanistic nature of the new world-view in connection with its claim to universality thus not only helps in the creation of a life-world with new projects but denies their origins as practical projects.

In his view of the world from the perspective of geometry, the perspective of what appears to the senses and is mathematizable, Galileo abstracts from the subjects as persons leading a personal life; he abstracts from all that is in any way spiritual, from all cultural properties which are attached to things in human praxis. The result of this abstraction is the things purely as bodies; but these are taken as concrete real objects, the totality of which makes up a world which becomes the subject matter of research. One can truly say that the idea of nature as a really self-enclosed world of bodies first emerges with Galileo. A consequence of this, along with mathematization, which was too quickly taken for granted, is the idea of a self-enclosed natural causality in
which every occurrence is determined unequivocally and in advance. Clearly the way is thus prepared for dualism, which appears immediately afterward in Descartes. (Husserl 1970: 60)

When this world-view and its consequences work their way back into the life-world, they are taken to be self-evident. (Husserl 1970: 68)

Jakob Klein has continued Husserl's thinking along these lines. According to Klein, the work of the founders of modern science, Galileo, Stevin, Kepler, Descartes, was kindled by an interest in applied mechanics and applied optics. There was already a scientific inheritance from the ancients. But where there were once several sciences, there came to be simply science. The several sciences which were grounded in prescientific interests of the time became the grounds of the new science. The worth of science as such came to be beyond question. The new science is thus erected on the basis of the old science but in "deliberate opposition to the concepts and methods of the older sciences." (Klein 1968: 119) The claim to universality on the part of the new science arises partly from its opposition to the older sciences or "school" sciences. Although the new science shares with the older sciences the most general propositions of the scientific or theoretical attitude it interprets these propositions from a wholly different basis.

And this reinterpretation of the ancient body of doctrine, which brings with it a characteristic transformation of all ancient concepts, lies at the foundations not only of all concept formation in our science, but also of our
ordinary intentionality, which is derived from the former. (Klein 1968: 120)

The new science comes to form the basis in experience upon which the formation of scientific concepts typically rests. It thus comes to conceive of its own activity in a way different from ancient science.

It sees itself not only as the science of nature, but as natural science - in opposition to school science. Whereas the naturalness of Greek science is determined precisely by the fact that it arises out of 'natural' foundations, so that it is defined at the same time in terms of its distinction from, and its origin in, those foundations, the 'naturalness' of modern science is an expression of its polemical attitude toward school science. This special posture of the 'new' science fundamentally defines its horizon, delimits its methods, its general structure, and, most important determines the conceptual character of its concepts. (Klein 1968: 120)

With science itself thus forming the grounds of knowledge and experience, the connection of the conceptual development to the practical intent underlying it is forgotten and the mutual relatedness or internal connection of concepts within the total edifice of science is emphasized. The intentionality of each concept is no longer thematic and a new mode of generalization becomes ascendant, and a scientized world is developed. There develops a new mode of generalization in which method is emphasized, and the generality of the object is not distinguished. Thus in the modern period with the ascendance of a 'universal' science attention came to be concentrated on method, or the operations performed on newly introduced symbols. (Klein 1968: 122)
Hans-Georg Gadamer picks up the theme of the emphasis on method. Gadamer begins with the statement that all knowledge is grounded in experience, but goes on to point out how with the advent of scientific method, experience took on a wholly different meaning. With this new meaning of experience then, argues Gadamer, the human, as such, could no longer be accounted for, even though the ground of knowledge was still human experience. The human, for Gadamer, turns out to be the ability to make practical judgements, in other words, to decide the ends of action. He then goes on to characterize the problem of human life in present day society in terms of a distended relationship between knowledge and action and suggests means for reintroducing the human, as such, as a whole, into our idea of knowledge and practice.

The nexus of the problem of scientific method is that it sets itself up as a legitimator of experience. It says that the only legitimate experience is a perfectly certain experience.

The experience, which through the methods of the sciences may be validated as perfectly certain experience, possesses, by virtue of these methods, this distinction. This is that it is fundamentally independent of every situation of action and every integration of action into a pattern. This 'objectivity' at the same time says that it is able to serve every possible pattern of action. Precisely in modern science has this realized its development in a specific manner; and to a broad extent it has transformed the face of the earth into a man-made environment. The experience which has been reworked by the sciences not only has the merit of being evident to and acquirable by everyone. In addition it raises the claim that on the basis of its methodological
model it is the only certain experience and is that knowledge in which each and every experience alone finds its legitimation. What accumulates outside of science in the above-mentioned practical realm of experience and cultural transmission must not only be subjected to verification by science. Should it, yet, hold its own ground against this, it belongs, nonetheless, within the scope of science as material for research. There is in principle nothing which in this manner cannot be subordinated to the competence of science. (Gadamer n.d.: 10)

In this perspective it is believed that metaphysics has been left behind, there is no such thing as essence, and thus there is a limitation of all empirical knowledge to scientific experience. "Nothing which is capable of being experience can remain withdrawn from the competence of science. If we encounter anywhere something unpredictable, accidental, contrary to expectations, the claim of universality of science certifies itself in this as well." (Gadamer n.d.: 11) All this, then, is an effort to make our experience of the world reliable.

There are problems, however, with science's claim to be all of knowledge. Science must forever be incomplete even if we accept its claim of universality with respect to its readiness to work over new experiences, for:

Even if the application of science enters into all practice, they are still not identical. For practice means not only the making of whatever one can make. Practice is also always choice and decision between possibilities. It always has a relationship to man's "being". (Gadamer n.d.: 11)

In antiquity there was no such distended relationship between knowledge and action; the human was treated as such, as an
entirety. Theory was simply that which guided practice. In Egypt and Babylonia geometry and mathematics were theoretical pursuits which grew out of practice for practice. Thus science was only the highest ascent of the knowledge which guided practice. In ancient Greece we have the first instance of "pure theory", knowledge for its own sake, and thus a new relation between theory and practice grew out of this; science and its application went separate ways.

Since in ancient Greece, however, the human was still seen as such, there was not yet the atomistic, reductive view of the human which characterizes modern science and its method and distends the relationship between theory and practice. In the seventeenth century, particularly with Descartes and Galileo:

Only that which could be controlled could have validity as experience. Thus experience itself in the seventeenth century again became a tribunal of verification before which the validity of mathematically projected laws could be confirmed or refuted. (Gadamer n.d.: 12-13)

In this way a knowing conquest of nature could be brought about. Galileo, for example, could by means of abstraction understand laws which were intertwined in a network of relations. This abstract isolation of individual relationships makes possible a new kind of relationship of knowledge to practice, that of a constructed application.

The knowledge of science and of everyday life, although initially in opposition, are brought together by means of subjecting to the "tribunal of verification" the human
experience in daily practice, thus making everyday experience consonant with the constructed application of science. We now come to the key to the problem. The human is seen at once as a being which can be explained in terms of abstracted causal relations, and as one which can make use of these relations in terms of a constructed application for the attainment of desired ends. To avoid the untenable contradiction involved in this formulation we must see the human as extraordinary since he is capable of applying knowledge and making his environment, his culture. In other words, a being which behaviorism could explain could never make use of behaviorism.

Since the human is not, as in the mechanistic worldview, explicable in terms of molecules in motion, we must attempt to formulate "human" in other terms. For Gadamer, this may be done in the following manner. The human being may be characterized as having an apparent wealth of capacity for perception, movement and inequality; as having a relationship to his own body. Since the human being at least partially creates himself, understanding himself is a task which is unending, incomplete and continually in view. In short, humans have history. The value of science in this enterprise of understanding is simply to elucidate the complicated mechanisms which make possible human reactivity and consciousness. To behave theoretically, then, belongs to human practice. We, as beings, make decisions as to the ends of our actions, even if only in giving assent to the constructed
applications of scientistically derived rules, and our language makes possible the viewing of future behavior and, thus, the relation of means to ends.

As hinted at by Husserl, Klein and Gadamer, there are different sorts of interests giving rise to different conceptions of knowledge. One sort takes as the interest constituting its knowledge the furthering of many practical aims of different sorts of people. The other technically delimits the possible aims of everyday life through the demand for the control of experience, even though it, as well, was originally based on practical aims. Husserl also hints that the interest behind those aims in controlling experience through the idealization of reality is an interest in domination.

Along with this growing, more and more perfect cognitive power over the universe, man also gains an ever more perfect mastery over his practical surrounding world, one which expands in an unending progression. This also involves a mastery over mankind as belonging to the real surrounding world, i.e., mastery over himself and his fellow man, an ever greater power over his fate, and thus an ever fuller "happiness" — "happiness" as rationally conceivable for man. (Husserl 1970: 66)

At this point we can establish the connection between knowledge and interest. In the phenomenological critique of psychologism and behaviorism and the resulting notions of intentionality and apperception, we have a formulation of this relationship. Asserting that the world tells us what it is, results in untenable contradictions. Perception is, rather, the active making of the distinction between object
and background. Since objects are thus actively constituted there is a "unity of meaning" which is reflective of human purposes, in the organization of the world after a specific scheme. Thus, to grasp the meaning or use of an object is simply to view it as that object. Perception is evaluation. The world does not divide itself up for us. Different "modes of intentionality", ways of dividing up the world, thus circumscribe the ways of achieving a technical control over a world so conceived, and thus set parameters of action orientation. An "interest" in domination is a "mode of intentionality" in which absolute technical control is emphasized. Intentionality is invariant. Interest, however, reflects various emphases. A claim to self-evidence or objectivity emphasizes an interest in technical control. The interest in domination is furthered on the part of the scientististic conception of knowledge, furthermore, by the concealment of its ties with particular interests. It sets itself the task of presenting itself as self-evident.

From everyday experience we know that ideas serve often enough to furnish our actions with justifying motives in place of the real ones. What is called rationalization at this level is called ideology at the level of collective action. In both cases the manifest content of statements is falsified by consciousness' unreflected tie to interests, despite its illusion of autonomy. The discipline of trained thought thus correctly aims at excluding such interests. In all the sciences routines have been developed that guard against the subjectivity of opinion, and a new discipline, the sociology of knowledge, has emerged to counter the uncontrolled influence of interests on a deeper level, which derive less from the individual
than from the objective situation of social groups. But this accounts for only one side of the problem. Because science must secure the objectivity of its statements against the pressure and seduction of particular interests, it deludes itself about the fundamental interests to which it owes not only its impetus but the conditions of possible objectivity themselves. (Habermas 1971: 311) (cf. quote from Kersten p. 149 this chapter)

Jurgen Habermas picks up Husserl's notion of the rootedness of theory in the guiding interest of life-world situations and his critique of the "objectivist" illusion of modern science which loses sight of active human subjectivity. Habermas, however, sees in Husserl's interest in pure theory, objectivity and certainty a reliance on the same ontology inherent in positivism. He criticizes Husserl for, after establishing the connection between knowledge and interests, trying to effect a total separation of interest and theory. Husserl had arrived at the conclusion that science's image of a "reality-in-itself consisting of facts structured in a law-like manner" (Habermas 1971: 305) conceals the constitution of those facts and prevents awareness of the connection between knowledge and life-world interests. Habermas believes Husserl to be mistaken in the claim that since phenomenology brings this to consciousness, it itself is free of such interests. (Habermas 1971: 306) Husserl's expectation that a return to a method of revealing such interests is in itself a practical reorientation is false.

It is to this freeing of knowledge from interest that Husserl attaches the expectation of practical efficacy. But the error is clear. Theory in the sense of the classical tradition only had an impact
on life because it was thought to have discovered in the cosmic order an ideal world structure, including the prototype for the order of the human world. Only as cosmology was theoria also capable of orienting human action. Thus Husserl cannot expect self-formative processes to originate in a phenomenology that, as transcendental philosophy, purifies the classical theory of its cosmological contents, conserving something like the theoretical attitude only in an abstract manner. Theory had educational and cultural implications not because it had freed knowledge from interest. To the contrary, it did so because it derived pseudonormative power from the concealment of its actual interest. While criticizing the objectivist self-understanding of the sciences, Husserl succumbs to another objectivism, which was always attached to the traditional concept of theory. (Habermas 1971: 306)

Habermas suggests, on the contrary, the acceptance of an emancipatory cognitive interest, instead of a falsely based hope of separating science from interest. The emancipatory aspect of phenomenology is precisely and simply its revealing of the connection between knowledge and interest which is suppressed in the positivistic self-understanding of the sciences. What it reveals is that the mathematically-mechanistically oriented sciences have an interest in control and domination revealed in the delimiting of the range of legitimate experience in their reliance on method. The revealing of this connection also reveals the possible autonomous formation of goals by human beings and the concomitant conceptions of knowledge. This possible emancipatory interest behind the revealing of the connection and the formation of new conceptions with different non-mechanistic, human grounds is itself repressed in the positivistic,
mechanistic conception of knowledge. Thus part of the interest of the abstract, mechanistic conception of knowledge is the repression of an interest in emancipation, particularly since the predictability resulting from the application of scientific method demands the control of experience.

The specific interests, cognitive and social, which are connected with and help constitute the abstract, mechanistic view must be analysed historically. Franz Borkenau has carried out this historical analysis and characterizes the transformation in philosophy mentioned by Husserl, Gadamer and Klein as transformations in the conceptions of nature and of human society. According to Borkenau, the mathematical-mechanistic world view came to characterize thought in metaphysics, the theory of knowledge, physics, and social theory. Borkenau describes the mathematical-mechanistic world view as follows:

It is mechanistic insofar as all events are reduced ultimately to movements of qualitatively similar bodies and to transformations of movement within a space-time continuum . . . , it is mathematical insofar as scientificness and certainty are recognized only in the form of proof of Euclidean geometry and its corollaries and insofar as there exists in it the tendency to express it in terms of events conceived as a sum of transformations of motion by means of a set of linear approximations. (Borkenau 1932: 311-12)

This world view is connected, logically and historically, claims Borkenau, to a newly arriving set of social relations, particularly production relations. The connection is not, however, the popularly conceived one of the efficacy of this model for the creation of new production techniques.
based on the new science. It was rather that a newly arising form of production, manufacturing processes, provided the preconception for the new abstract, mathematical-mechanistic world view. Although the scientific world view was later able to provide applications to production, in the manufacture period there were no applications of natural science in production. Borkenau explains the influence of the manufacture preconception as follows:

Manufacture, as a systematic reduction of work to the most primitive manual processes and as a large operation of dividing up manual labor, requires no natural science and promises not to make use of it; of all centuries of modern history the seventeenth is by far the poorest in technical inventions, its natural science is the purest abstract theory. Within this, manufacture plays above all the role of a preconception, insofar as the manufacturing process of production is characterized by the most thorough-going abstraction from everything qualitative. The extreme division of labor creates on the one hand an abstract general substrate of labor, whose chemical and other qualities are ignored as much as possible, and which is to be viewed only as "stuff in itself", as pure matter; it creates, on the other hand, the completely unqualified worker, who is considered only as labor power in itself, whose function is labor in the abstract, pure physical movement. The greatest classic physicist of the manufacture period, Galileo, deals in his main work, the "Discorsi", with the laws of abstract work. (Borkenau 1932: 312)

During that period, then, rather than provide an orientation toward technical applications, the analogy of a manufacturing work process provided a paradigm for the explanation of all events. It is in the class struggles which accompany the development of this new mode of production
that Borkenau seeks to explain the generalizing of the mathematical-mechanistic world view. He proposes to get at this "pre-history" of the mechanistic conception of nature by examining the history of the concept, "natural law". In this concept, claims Borkenau, images of natural and social order become connected from the thirteenth century on. The concept arises as an expression of the change from hereditary to occupational society, and with Aquinas becomes the object of systematic argument. What is remarkable in the new concept is that its two terms, lex and natura, law and nature, were until that time thought to be strictly opposed as representative of the good of God and the evil of the flesh, respectively. Aquinas comes out in justification of a nascent entrepreneurship by ascribing to the human being the ability to realize God's works on his own. For the ascription of this ability, however, he needs to assert that the law of God is "the expression of the general natural inclinations of humans, of a natural harmony between their physical make-up and their psychic aspirations which can come to their rightful fruition only in a properly ordered society." (Borkenau 1932: 313) With this doctrine Aquinas proves to be apologist for the feudal social order since it is seen as "natural", and since the estates are said to have different natures, they each have a different natural law. With Aquinas, however, the notion of natural law is applied only to human society.

With the disruption and misery during the fall of the feudal order, however, it became impossible to view the human
being as essentially good in view of such misery. Humans came to be seen as incapable of effecting their own redemption. The problem of harmonious order now became amplified. Now, with Nicolas of Cusa, the possibility of a harmonious conception endures through his positing of a harmonious realm of being in opposition to the realm of appearance. The structure of nature now provides a paradigm for moral law since one cannot be obtained from viewing a wrecked human life, and nature begins to be interpreted in mathematical measures.

The separation of the physical from the moral law of nature leads to the notion that societal life can be deductively or analogically understood only from the laws of an outer nature, while Thomas Aquinas wanted, vice-versa, to explain nature from the purposes of human life. (Borkenau 1932: 315)

Cusa proved to be an ideologue for oligarchy in justifying a harmonious social order within the downfall of feudalism. His philosophy of harmonious order had no value for those classes deprived of tradition and faced with the prospect of simply adjusting to the conditions of a budding money capitalism. Calvinistic pessimism, which denied harmonious order, became the ideology of those classes and prepared the entrepreneur for an asceticism and self-denial necessary for delaying gratification for the sake of future wealth while it also prepared the lower classes for the self denial required in the capitalist mode of production.

These positions are brought more and more together,
However, beginning with the philosophy of Ficino. With Ficino the harmonistic philosophy of being is connected with Calvinistic pessimism in the following way:

The 'appetites' of the soul drive irresistibly toward meaningless motion. That is its "fatalis lex". But while the apparent movement is meaningless, it does have an essential meaning. In the cycle of countless earthly lives bound by the wanderings of the soul all objects of passion pass by in order that life be freed of them all. With Ficino the Calvinist doctrine of the meaninglessness of human existence stands side by side with the harmonistic philosophy of being.

(Borkenau 1932: 316)

Now the harmonistic interpretation of nature is emphasized and supported by Ficino's construction of the spiritual and physical worlds as a system of circles.

Borkenau goes on to describe the interplay between the growing mechanistic conception of nature and the further transitions to bourgeois modes of production. He traces this development through the bourgeois revolutions in Holland, France and England, the rise of the bourgeois class and through the works of Copernicus, Galileo, Machiavelli, Althusius, Descartes and Hobbes, through the notions of social contract, anthropology and theology. Although, as Borkenau notes, this development is marked by constant changes in the nuances of class rivalry and changes in the place of the human being in the world-system, the definite result of this development is, nonetheless, particularly with Descartes and Hobbes, an overwhelmingly mechanistic interpretation of the human and the natural in support of those classes benefitting from
rationalized forms of production.

Both Hobbes and Descartes were members of the gentry in their respective countries. According to Borkenau, Descartes' chief problem was to posit thematically the essential good of the world in the face of its bad appearance. (Borkenau 1932: 326) Descartes finally re instituted the hope of a universal science. Mathematical mechanics is made the key to human and external nature. His attack on pessimism is achieved through changing thought about the world rather than changing the world itself. The essence of the world is made identical with the essence of human reason. Borkenau claims that this contemplative attitude, which is common to all bourgeois philosophy, is conditioned secondarily by the agreement between the French gentry and the basic social power relations but is primarily conditioned by the "handling" of the human being under capitalism. This optimism worked in support of the gentry in that it attempted to convince the middle classes to conceive of fatality optimistically. This did not lead, however, to a formulation of a vastly different or revolutionary morals but simply attempted to interpret "unavoidable fate" optimistically.

The law-like interpretation of fate as a purely external event means: (1) its mechanistic interpretation as a chain of purely external causal connections, (2) the rationalization of these external causal connections, i.e., its conception in mathematical laws. (Borkenau 1932: 327)

The extent of the relationship between social order and activity, science and technology, domination, and abstract
thought is demonstrated further by Lynn White. White traces the infusion into European warfare of the stirrup. The stirrup made mounted shock combat possible. A mounted combatant could then use a lance or swing a weapon with force without falling off his horse. White ascribes to the profusion of the stirrup a key place in the development of feudalism, particularly with Charles Martel after the Battle of Poitiers. With the new possibility of large, standing mounted armies further social changes were required. The institutions of vassalage and benefice were developed, Church lands were confiscated, a new plough was developed and other agricultural methods changed to provide support for such armies in the interest of expansion. White hints at some possible connections between social activity, technological thought, and underlying interest.

As our understanding of the history of technology increases, it becomes clear that a new device merely opens the door; it does not compel one to enter. The acceptance or rejection of an invention, or the extent to which its implications are realized if it is accepted, depends quite as much upon the conditions of a society, and upon the imagination of its leaders, as upon the nature of the technological item itself. As we shall see, the Anglo-Saxons used the stirrup, but did not comprehend it; and for this they paid a fearful price. While semi-feudal relationships and institutions had long been scattered thickly over the civilized world, it was the Franks alone - presumably led by Charles Martel's genius - who fully grasped the possibilities inherent in the stirrup and created in terms of it a new type of warfare supported by a novel structure of society which we call feudalism. (White 1962: 28)

White later turns his attention, once providing his interpretation of the origin and development of feudalism,
to the study of the diffusion or invention of mechanical and power devices, and discovers that even when a particular tool or the appropriate knowledge had been available for centuries, it is not until the late middle ages that they are really put to use in using nature's forces.

Inasmuch as the Hellenistic age invented not only the cam but also gearing in its three basic forms - star, crown, and worm - and was producing very elaborate geared mechanisms by the first century B.C., it is strange that its ingeneous technicians did not make greater progress in developing sources of power. Hero of Alexandria's steam reaction turbine and his rather doubtful little windmill seem to have had no influence upon technology until the Renaissance. (White 1962: 79-80)

Thus the institutionalization of a device or innovation requires both appropriate social conditions and some kind of abstract conception of its "implications". It is only with retrospect that a historian can view with incredulity the fact that Greeks did not have clocks, mills and cranks, even though they may have had many of the requisite parts. A need for a device, and the means of its implementation require also a perceived need for its use, a need or interest in part developing with and requiring certain social conditions and certain abstract conceptions of nature and its measurability. A clock does not get invented until someone has a need or interest in the precise measurement of time.

Thus the organization of human life, conceptions of nature, and the use of tools in the conduct of life, develop and change together, each effecting the other. A certain graphic representation of motion is required for the construc-
tion of relatively complex machines. The use of certain machines for productive or military purposes is predicated on a specific organization of human labor. One cannot have mills without millers. Not only do science and technology in their constructed applications have a reciprocal effect on social organization but they also effect the human conception and performance of natural physical movement. The crank, one of the most important inventions in the development of technology, involves a form of motion which is difficult for humans to conceive without extensive practice. The more abstractly conceived types of movement used in the development of technology are actually contrary to inherent notions and performance of motion in humans.

Continuous rotary motion is typical of inorganic matter, whereas reciprocating motion is the sole form of movement found in living things. The crank connects these two kinds of motion; therefore we who are organic find that crank motion does not come easily to us. The great physicist and philosopher Ernst Mach noticed that infants find crank motion hard to learn. Despite the rotary grindstone, even today razors are whetted rather than ground: we find rotary notion an impediment to the greatest sensitivity. The hurdy-gurdy soon went out of use as an instrument for serious music, leaving the reciprocating fiddle-bow -- an introduction of the tenth century -- to become the foundation of modern European musical development. To use a crank, our muscles and tendons must relate themselves to the motion of Galaxies and electrons. From this inhuman adventure our race long recoiled. (White 1962: 115)

White also points out that many of these developments were connected and coincident with an abstract physics and mathematics already in the fourteenth century as "tendencies
of that age", and states that "regularity, mathematically predictable relationships, facts quantitatively measureable, were looming larger in men's picture of the universe." (White 1962: 125) Already in the age of Aquinas, then, we have the beginning of an abstractly, quantitatively approached organization of social life, human movement, mechanical design and human project in general. Borkenau's beginning with Aquinas in tracing the connection between the mechanistic world view and budding capitalist interests now appears less strained, particularly since another writer links Aquinas with mercantile interests.

In the middle ages the antagonism (between town and country) was first deepened by the hostility of tough barbarian conquerors against soft Roman townsmen, then almost institutionalized by the feudal notion of a tripartite society of noblemen, clergymen, and peasants (with no recognized role for traders), and lastly exasperated by the resentment of conservative, slow-moving lords and farmers against pushy and revolutionary burghers. The Church, too, in spite of the efforts of Aquinas and a few other thinkers to reach a more equitable appreciation of the functions and needs of merchants was unable to overcome the strictures of its own old-fashioned economic theories, formed in agrarian surroundings and hardened by Greco-Roman biases against trade. (Lopez 1971: 149)

White, however, ends up simply hinting at the kind of interest involved in the developments which he describes. The hope of unheard-of power over the human and the natural is depicted as the impetus for the development.

By the middle of the thirteenth century, then, a considerable group of active minds, stimulated not only by the technological successes of recent generations but also led on by the will-o'-the-
wisp of perpetual motion, were beginning to generalize the concept of mechanical power. They were coming to think of the cosmos as a vast reservoir of energies to be tapped and used according to human intentions. They were power-conscious to the point of fantasy. But without such fantasy, such soaring imagination, the power technology of the western world would not have been developed. (White 1962: 133-4)

Support for the notion of the connection of the will to power as formative of scientific abstraction and technological application in terms of the domination of people comes from the fact that from ancient times through Charles Martel and somewhat less so into modern times the sole area of the use of technical application is in warfare. "In a practical direction the sole systematic application of the Ancient's physical knowledge was to warfare." (Giedion 1969: 32) With the interest in conquest, expansion, control and domination thus spurring on the interest in furthering technical control of natural forces in those interests we move in a course of development through a subjection of the human being to a rigidly organized labor process in the interests of those not performing the labor, the requirement that human movement replicate forms of motion alien to human physical make-up, a reorganization of social institutions to meet new productive and military requirements, and finally to a period in which the apparently self-evident worth of technological application based on abstract science and its absolute claim to account for all significant process produce a social situation in which a blind faith in progress yields to production for the sake of production. (Giedion 1969: 31) Once industrial
production becomes a possibility people are literally forced from country to city in the Enclosure movement into a miserable life of poverty and monotanous labor, which mechanization is said by apologetic historians to improve the satisfaction of human needs. (Thompson 1963: 207-384)

Knowledge and Interest: "Objectivity" as Ideology

The invocation of the terms 'human' and 'society' in this context, however, turns out to be, at best, ambiguous, and at worst, ludicrous and nonsensical. It is thus with some grounds that Siegfried Giedion declares that we have regressed from, not advanced on, the Greeks.

We owe, in large measure, our understanding of the world to the Greeks. From them we inherited a magnificent foundation: mathematics and geometry, modes of thought and expression. Yet, we have departed a long way from the Greeks. In many respects we have gained; in the main, we have lost. (Giedion 1969: 14)

What is hidden by the ideology of the mastery of nature based on abstract science is the mastery of the human being which it inevitably implies. For various reasons, which will be discussed here, the domination of nature involves the domination of people. The faith in progress based on scientific technology, the mastery of nature as it is typically referred to, is ideological because the question is hardly ever raised as to just what "mastery" means. The phrase, the human mastery of nature, is ambiguous; and, although it is assumed that the human conquest of nature is carried out by means of
science and technology, explanations or accounts of this connection have hardly ever been offered.

(The real object of domination is not nature, but men... The necessary correlate of domination is the consciousness of subordination in those who must obey the will of another; thus, properly speaking, only other men can be the objects of domination.

If the idea of the domination of nature has any meaning at all, it is that by such means—that is, through the possession of superior technological capabilities—some men attempt to dominate and control other men. The notion of a common domination of the human race over external nature is nonsensical. The point can be understood best by examining what is signified by the word 'nature' in relation to the mastery of nature through science.

(Leiss 1972: 122)

That science and technology are not politically neutral has already been argued on different fronts. Scientific method itself involves the control of experience, not just experimentally but also in the legitimation and absolutization of its world-view. They are related historically to class interest and are applied principally in rigidly organizing human life and labor and in warfare. In their attempted claim to self-evidence they ideologically deny the possibility of different conceptions of order being applied to different interests, even though their world-view itself derives, logically and historically, from the interests of specific classes and people in specific historical situations. In interpreting the whole universe mechanistically science is prescribing an ethic. The thereby limited range of experience which is considered admissible delimits a range of possibilities for human action. The ensuing further development of social
organization in the image of the scientific view of the universe and its acceptance as self-evident is a further indication of the ethically prescriptive character of the scientific world view.

Interest is always formative of knowledge. What is involved in this statement is not that we can, at will, form a cosmology in our interests and acquire a commensurate mastery in a life-world created in the image of that cosmology. No expression of the will to power alone can make successful the application of mathematical-mechanistic science in industry and warfare. The case is simply that the absolutization of the mathematical-mechanistic world view makes highly unlikely the application of human knowledge in other interests than warfare and other forms of domination, like industry. The acceptance of science's claim to represent all of experience, nature and reality in a dangerous acceptance, an acceptance, however, which itself is pre-conditioned by a historical profusion of societal and scientific forms based on a mathematical-mechanistic model. The standard apology on behalf of modern science is that it is practical. This, however, is infantile question-begging, since it leads us back simply to the question of the interests on which science is based. What objectives can be served? The acceptance of the value of the mastery and power over things leads to a conception of the world as value-free. The world comes to be seen as stuff for particular purposes.
The life world is permanently 'de-valued' as the realm of purely subjective experience from the viewpoint of science, despite the fact that this is the world in which all human activity occurs. Secondly, the abstract-universal characteristics of the science based upon the mathematization of nature make it intrinsically impossible for that science to possess a direct relationship to specific goals formulated in human practice; the science can only make available through its technical applications a certain range of new possibilities for practical use. This means that such a science cannot transcend the purely technical level, that is to say, it cannot contribute to the formation of an objective basis for the judgements, choices, and valuations that must be made at every point in human practical life. (Leiss 1972: 131)

The aspect of domination inherent in the scientific world view becomes apparent when the technological a priori contained in its image of nature is revealed. A range of ends or purposes is delimited in a view of nature. A brief survey of anthropological literature reveals the "practicality" of a myriad of views of nature. (cf. Levi-Strauss, Eliade) Thus, since a view of nature is always involved in the use of nature, there is no such thing as nature per se. If there is a nature ultimately and completely in itself then there is nothing which we might say about it. The view of nature involved in modern science already contains intrinsically the possible range of human action which might be directed within and toward a nature thus conceived.

Although its method claims to be one of observation, modern science tells us to ignore our senses. According to science, the nature which is given to us in sense perception masks an underlying mathematical structure. If we turn the
tables in this process, however, we may more readily say that science casts a "veil of ideas" over the nature which we experience in our everyday life. (Leiss 1972: 139) The self-denial thus involved in the enforcement of the scientific "veil of ideas" which is involved in seeing ourselves and our environment simply as "stuff" is repressive enough without the ideology and practices of the social sciences which view humans and societies according to the same mode of abstraction and possess the same capability of conceiving means of technical control. A scientific-technological attitude justified on the grounds that it satisfies human needs thus appears irrational in its dependence on the continued and increasing instinctual renunciation. In this way, self-preservation is made into an end in itself. (Leiss 1972: 152) To conceive even of external nature alone solely in mathematical-mechanistic terms is a dominating conception of human nature as well since it precludes the efficacy of human action in the world. The attempt to convince people that this is the way it is, is also contradictory since it is both the assertion that all that happens is determined and thus our actions must be pre-defined accordingly and is also an exhortation to act as though that were the case instead of acting in some other way, which would be impossible if the mathematical-mechanistic world view were absolute.

Science and technology do not thus provide means which may be used for any ends. Galilean and post-Galilean science
contain an instrumentalist technological a priori; the control of nature is the basis of its conceptual organization.

The technological a priori is a political a priori inasmuch as the transformation of nature involves that of man, and inasmuch as the 'man-made' creations issue from and re-enter a societal ensemble.

(Marcuse 1964: 154)

In the seventeenth century a science developed which became a large part of the organizing principle of the ensuing life-world. Scientific and technological projects of today are based on the same mode of abstraction and issue from a life-world created in that image. At this point attention might also profitably be paid to the possible liberative influence of technology in view of problems of social and international conflict and the public effect of the control of mass communications which effects the consciousness of the connection of interests with science and technology in order to reveal the historical possibility of human decision and choice in technological application for the satisfaction of human needs. This, however, is beyond the scope of the present work. I shall restrict myself to an examination of the ideological character of modern scientific and instrumental thought and of the alternatives revealed in that examination. It is ideological chiefly because in the mechanization of the universe and the ensuing mechanized social reality technology "provides the great rationalization of the unfreedom of man and demonstrates the technical impossibility of being autonomous, of determining one's own life." (Marcuse 1964: 158) This ideo-
logical character, although related to the mathematical-mechanistic world view, does not rest simply in that world view itself. The interests in controlling and dominating nature and humans, which created the mathematical-mechanistic world view, are now those interests in absolutizing it. Surely the results obtained technologically from the mathematization of nature prove its accurate conception of a segment of nature and can be used to satisfy real human needs. It is the interest involved in absolutizing the mathematical conception of nature and the human which I am calling ideological and repressive.

Even the absolutization of the mathematical mechanistic view of nature contains human political consequences. The absolutization of a similar view of humans and society which derives from both the view of nature and its consequences increases the technical and ideological means of control over human beings. The emphasis on externality and constraint in absolutizing the status quo pointed out in chapter one coupled with the technical nominalism of Lazarsfeld are the present culmination of the logical and historical connections between the absolutization of the mathematization of nature and the domination of human beings. In the accurate depiction of a mechanized social reality after a mechanistic image, the social scientist, unless a dialogue concerning the ends of social inquiry is involved, will simply help provide new means for the technical control of people.
When this methodology makes its appearance in the social sciences, for example, it advertises itself as "value-free" inquiry, that is, an approach wherein the researcher vigorously attempts to divorce himself and his evaluations from the material of his study. In illuminating the processes by which choices and decisions are actually made under particular circumstances, these studies can result in the development of techniques for controlling behavior; on the other hand, they cannot aid in improving the quality of the choices that are made. With respect to the control of both men and nature we find ourselves in possession of ever more efficient means for the accomplishment of ever more obscure ends. (Leiss 1972: 132)

The most curious aspect of the position of value-freedom is revealed in the adamance of its adherents. The holders of this position have a value in denuding the universe and its investigation of value. Weber and others exhort us, correctly, not to believe that we can derive value positions by means of the methods of modern science. If, however, we are to pose our problem as one of the enlistment of science in the cause of humankind then we must formulate an inquiry which has as its task the discussion and clarification of that cause. The scientistic prescription against the reasoning of ends or values thus turns out in the end to contradict the tenet of not deriving values from method and values becomes based on scientific method in considering all other values to be simply subjective. In this sense, ends and values become subjected again to a scientistic tribunal. It is considerations such as this which may have led Marcuse to write, "Epistemology is in itself ethics, and ethics is epistemology." (Marcuse 1964: 125)
Our human experience which becomes mystified through pressure to accept the view of a mechanistic universe helps to mechanize our lives and our society. The necessity of this acceptance, however, reveals the presence of human choice and decision. No matter how many technical rules are developed for application to no matter how many types of situations, human choice and practical judgement is still necessary, even if only for deciding which rule fits where. A mechanistic social science attempts to rid the social world of human choice as much as possible and to convince people that there is none there at all. The necessity to convince, however, is evidence that the opposite is true. Thus Marcuse writes, "The world of immediate experience -- the world in which we find ourselves living -- must be comprehended, transformed, even subverted to become what it really is." (Marcuse 1964: 123)

The first comprehensive attempt to apply scientific method to the rationalization of human conduct - what may be termed the first systematic program of behavioral engineering - turned out to be, not a dispassionate and positive science of behavior, but a wholly passionate and negative campaign to make men behave. (Matson 1966: 36)

The absolutization of perspectives furthering the mastery of nature is thus illusory and ideological when the claim is made on its behalf that it serves the satisfaction of 'human' needs, when in actuality "what we call Man's power over Nature turns out to be a power exercised by some men over other men with Nature as its instrument." (C.S. Lewis
The Abolition of Man 39, quoted from Leiss 1972: 195) The subjection of our own immediate experience to technical and mechanistic requirements serves to mystify our experience. R.D. Laing describes the situation with respect to a child of two.

As he is taught to move in specific ways, out of the whole range of possible movements, so he is taught to experience, out of the whole range of possible experience. Much current social science deepens the mystification. Violence cannot be seen through the sights of positivism. (Laing 1967: 51)

The choice of syntax and vocabulary are political acts that define and circumscribe the manner in which 'facts' are to be experienced. Indeed, in a sense they go further and even create the facts that are studied. (Laing 1967: 53)

Knowledge, Social Activity, and the Reification of Positivism

The meaning of both (oddly enough) Lazarsfeld and Husserl becomes clear. The "power over man's fate" turns out to be a self-fulfilling prophesy. If people experience groups simply in terms of their 'cohesiveness' the predictability of our actions as well as the cohesiveness of groups is enhanced. An orientation to reality in terms of its definition in universal, certain, reliable terms is the creation of a social world which can to a great extent be accounted for in those terms. What is left over, what cannot by those terms be accounted for, is revealed in the necessity of the initial orientation. Human activity is characterized by its always having a purpose. Decision and direction are involved no
matter how strongly determinant is the pressure of highly organized group life.

The claims to externality, uniformity, regularity, universality, and certainty produce, when believed in or enforced, a social world which is almost accountable in those terms. Much of this was anticipated and realized by Marx as early as 1844. His critique of classical political economy focuses first on its assumption that the sole characteristic of human nature is an interest in self-preservation and that human labor is simply wage-earning activity. The struggle between capitalist and laborer described by Marx is viewed as inevitable once the assumption is made that the laborer's sole interest is in maintaining his physical existence and, further, that even this can only be done by earning a wage in a capitalist system. Aside from the contradictions contained in the system itself, Marx goes on to point out the fallacy in the assumptions themselves. Marx considers human activity to be something other than simply wage-earning activity and admits of other possible purposes than mere self-preservation. He points to the presence of purpose in human activity by distinguishing the human from the animal relationship to nature.

The animal is immediately one with his life activity. It does not distinguish itself from it. It is its life activity. Man makes his life activity itself the object of his will and of his consciousness. He has conscious life activity. It is not a determination with which he directly merges. Conscious life activity distinguishes man from animal life activity. It is just because of that that he is a species being. Or rather, it is only because he is a species
being that he is a conscious being, i.e., that his own life is an object for him. Only because of that is his activity free activity. Estranged labor reverses this relationship so that it is just because man is a conscious being that he makes his life activity, his essential being, a mere means to his existence. (Marx 1964: 113)

The ability of the human being to separate himself from his environment and direct activity toward it is what makes possible both human purposive activity and the alienation resulting from the employment of all human activity for the maintenance of a system. The conception of what is produced and the conception of its worth are involved from the beginning, for the worker not only effects a change of form in the material on which he works, but he also realizes a purpose of his own that gives the law to his modus operandi, and to which he must subordinate his will. And this subordination is no mere momentary act. Besides the exertion of the bodily organs, the process demands that, during the whole operation, the workman's will be steadily in consonance with his purpose. This means close attention. The less he is attracted by the nature of the work, and the mode in which it is carried on, and the less, therefore, he enjoys it as something which gives play to his bodily and mental powers, the more close his attention is forced to be. (Marx 1967: 174)

What happens, then when purposes of activity are taken to be the self-evident ends of a system is that the only human purpose involved is a decision to support one's existence by means of wage-earning activity. The mechanistic orientation of human beings to nature, which conception was first based on a manufacturing labor process, in turn further mechanizes the labor process itself. Labor thus performed is estranged labor.
What, then, constitutes the alienation of labor? First, the fact that labor is external to the worker, i.e., it does not belong to his essential being; that in his work, therefore, he does not affirm himself but denies himself, does not feel content but unhappy, does not develop freely his physical and mental energy but mortifies his body and ruins his mind. The worker, therefore, only feels himself outside his work, and in his work feels outside himself. He is at home when he is not working, and when he is working he is not at home. His labor is therefore not voluntary but coerced; it is forced labor. It is therefore not the satisfaction of a need; it is merely a means to satisfy needs external to it. Its alien character emerges clearly in the fact that as soon as no physical or other compulsion exists, labor is shunned like the plague. External labor, labor in which man alienates himself, is a labor of self-sacrifice, of mortification. Lastly, the external character of labor for the worker appears in the fact that it is not his own, but someone else's, that it does not belong to him, that in it he belongs, not to himself but to another. (Marx 1964: 110-11)

The same instrumental reason that deprives human labor of human purposes deprives social inquiry of human purpose. The interest in technical control, in making people behave, which involves a form of labor "merely as a means to satisfy needs external to it" is the same interest involved in a social science which has prescriptions in principle against the incorporation of the furthering of practical human goals into its inquiry. An inquiry based on a mechanistic, positivistic conception of nature and of society can only have as its interest the control and domination of people.

The positivist emphasis on "sensorily apprehended reality", furthermore, contains contradictions and, hence, ideology in itself. We find this out when we observe what happens when one of its adherents, Ernst Mach, pushed its
tenets to their absurd conclusions.

(The) basis of Mach's outlook is simple: that all knowledge is a matter of sensations and that what men delude themselves into calling "laws of nature" are merely summaries of experiences provided by their own - fallible - senses. "Colors, space, tones, etc. These are the only realities. Others do not exist," he had written in his daybook. (Clark 1971: 60)

Here Mach has totally relativized the source and validity of knowledge and, yet, he calls our senses fallible. Against which "organization of experiences" is Mach checking experience and which could provide a criterion for deciding that our senses are fallible? Only an underlying concern for the universal certainty and reliability of all experience could lead one to want to devise a system with all-encompassing applicability.

Thus Mach's own hidden organization of experience, as well as the concern on the part of others for social approval, externality, constraint, rationality, and predictability for the sake of managing human activity create the conditions for the testing and validation of ideas in the conduct of scientific inquiry. The ideology, and hence danger, which I see at work here is that it becomes possible, through convincing others that certain conceptions of structure are self-evident, to orient perceptions, and hence action-orientation, by means of a kind of policed nominalism. As Laing, Husserl, Klein, Gadamer, Marcuse and Habermas have suggested, theories create facts, facts which then, in social
conditions also reflecting to a certain extent the same conditions formative of the testing situation, may be taken to be self-evident.

Decisions are made, then, which define the role of experience in inquiry. Rules for the making of such decisions, however, are defined institutionally, not logically. (Habermas 1974: 201) The creation of facts by theories, then, is carried out in accordance with those same rules. It is the attempt to claim self-evidence for the organization of observation and experience which is specifically ideological and repressive in the research process. In inquiry itself it is important to recognize and be aware of the "rules" which organize that inquiry.

The demand for controlled observation as the basis for decisions concerning the empirical plausibility of causal hypotheses entails a pre-understanding of definite rules. It is certainly not sufficient to know the specific aim of an investigation and the relevance of an observation for specific assumptions. Instead, the meaning of the research process as a whole must be understood in order that I may know to what the empirical validity of basic statements refers at all, just as the judge must always have understood the meaning of judicature as such. (Habermas 1974: 203)

The problematic nature of methodological considerations in social inquiry now becomes clear in its interplay with the institutional structure out of which it arises and which it in turn supports through its findings and through the ideological nature of its claim for the self-evidence of its most basic tenets. The social, ethical, historical and philosophical
status of this methodological debate may now be discussed. In the critique of positivist and rationalist methodologies, alternatives are revealed through the disclosing of the basic human intent and purpose involved in all knowledge. This is the theme of the following chapter.
CHAPTER IV

Conclusions - The Quest for Certainty and the Practice of Sociology

In contemporary social science the debate concerning the relative roles of evolution, conflict and human action in the production of society and of social science has become a heavily methodological one. The position on this issue as outlined thus far represents an attempt to trace the process of development of a world-view and its effects, which does not lean solely on a "factor" as cause of this development. It is specifically the role of human action which makes this impossible. Admittedly, to the degree that people make history behind their own backs, the role of conscious human action is diminished. What is being emphasized here, however, is that no factor can be singled out as in principle, in the fashion of a model, able to account for the development of human relationships and the concommitant world-views.

It is still possible, as for example with Borkenau, to provide an account of actual historical conditions without stating the necessity, according to an abstract principle, of the relations and conditions found.

Borkenau is not proposing a simplistic determinist account, for he explicitly denies that the beginning of the manufacturing process was the "cause" of the
mechanistic world-view. Rather, both arose together and interacted constantly, the progress of each conditioning and encouraging that of the other. (Leiss 1972: 88)

The methodological debate resulting from these issues has as its basis the question of the relation between knowledge and interest. This involves both the possible involvement of interest in the formation and use of knowledge in the object under investigation and in the investigation itself. If we take the sides in this debate to be represented by Popper, for example, on the one side, and Habermas on the other, a curious fact comes to light. Even Popper places a premium on the role of knowledge in evolutionary development and connects certain philosophies and epistemologies with different politics. In this light the exhortation to objectivity and value-neutrality becomes curious.

Thinkers on the positivist side of this debate themselves attempt to formulate the grounds for their approach to knowledge in terms of the "practicality" of that knowledge and hence of the approach to it. This amounts simply to a relativization of "interest", for it is only with reference to specific purposes that an activity or the form of knowledge which guides that activity may be said to be practical. An attempt, furthermore, to convince us that a given set of historical conditions is a natural state of affairs, as in principle beyond our control, is thus an attempt at mystification. Those who occupy superior positions within those conditions have an interest, if they are to retain that position
in misinforming those occupying inferior positions. Even with respect to an accurate description of conditions, then, letting alone the question of their cause or necessity, those in inferior positions have inherently a stronger interest in conveying accurate pictures than those in more privileged positions. Lucien Goldmann discusses the omnipresence of such interest in the research process:

There are no brute facts. No inquiry, no monograph is ever exhaustive. It only asks certain questions of reality and chooses the facts in the light of those questions. Moreover, in the image that it constructs, the importance given to the different facts that it accepts for recording is proportional to what the problems represent for the researcher or investigator. Thus there is always a set purpose, a collection of preconceptions that decide:

a) which questions may and may not be asked of reality;

b) the importance to be given to the different factors in which an interest is taken.

(Goldmann 1969: 48)

Although the traditions and preconceptions employed in this process of selection have themselves their material and historical foundations, there are, however, many traditions and interests to be drawn from. We are not cognitively bound in any causal sense to accept simply an ascendent empiricist approach to our environment. It is possible in engaging in inquiry to "transcend" the consciousness of one given class by

a) effecting a synthesis of the elements of truth provided by the perspectives of several different classes; and b) by preserving the elements of understanding already expressed earlier by this or that thinker but later abandoned under the influence of social, economic and political changes. (Goldmann 1969: 58)
This now brings us to the key point in the issue of the connection between interest and accurate, objective knowledge. Knowledge and interest are always related. The world does not divide itself up for us. An inquiry or approach which attempts to deal with reality on the basis of external causation and the supposed testing of propositions which state those causal relations is precisely on that account less comprehensive than one proceeding as described by Goldmann. An inquiry which utilizes the knowledge or information generated by various perspectives, each serving the interests of various classes, and which in this fashion attempts as comprehensive as possible a picture of social reality will thus have as its own interest an emancipatory interest. It will at least contribute to the de-mystification of the ideology of externality and constraint which serves the interest only of a ruling class.

Marx had also demonstrated the social conditioning of the historical and social sciences themselves and the impossibility of transcending certain limitations in the understanding of human reality without transcending at the same time the framework of capitalist society and objectively serving, either consciously or unconsciously, the interests of the proletariat by this very research. (Goldmann 1969: 66-7)

The historical fact of exploitation bears a relation to mechanism. Mechanism has served as an ideology to the extent that it justifies given conditions as inevitable. This ideology thus serves the interest of that class occupying a privileged position. Various world-views are connected to
the interests of various classes. When the holders of the mechanistic view enter into the methodological debate the acquisition of knowledge about human reality is taken to be a matter of sorting out "facts" according to "self-evident" testing procedures. Popper, for example, is purported to have produced a method whereby we may rationally and "critically" test ideas according to principles. As civilized people we are thus seen as possessing the ability to "let hypotheses die in our stead". (Der Spiegel Jan. 7, 1974: 84) This, however, ignores the actual struggles and conflicts waged in the world and in fact provides ideological support for the status quo.

In the struggle between liberals and leftists at German universities, the British professor Sir Karl Popper is receiving more and more attention. He is the most significant philosopher of science at present and as theoretician of a pluralistic-open society is the most vehement opponent of utopians and system-changers. (Der Spiegel Jan. 7, 1974: 84)

It is this refusal on the part of bourgeois science and philosophy to realize its grounds in given conditions which gives rise to a debate about method. The controversy is imposed by the self-restriction of bourgeois science.

In the controversy about method the actual political struggle is reproduced as a battle of minds. Accordingly, critical theory treats the expectation of a resolution of this conflict in the pure medium of the mind as a bourgeois illusion. (Wellmer 1974: 15)

Critical theory, on the contrary, does not thus focus away from the context in which it itself is constituted. It hopes to become a "catalytic moment within the social complex of
Habermas develops the notion of the relatedness of knowledge and interest. The organization of experience in our lives in a certain period of history and in a specific political context is also analyzable. We may examine the institutional and methodological context which also "determines the utilization of information scientifically produced." (Habermas 1973: 6) This "object domain", based on our pre-scientific, a priori organization of experience, determines the basis for science. Things which are capable of being manipulated are studied by empirical-analytical science. The subjects encountered in interaction are symbolically understood and this symbolization is studied by the hermeneutic sciences. These sciences deal with technical control and intersubjective communication, prediction and interpretation, respectively. "There is a systematic relationship between the logical structure of a science and the pragmatic structure of the possible applications of the information generated within its framework." (Habermas 1973: 8)

Habermas characterizes these technical interests as deep-seated interests, directing our knowledge. They are abstract, quasi-transcendental and invariant. (T)hey result from the imperatives of a socio-cultural life-form dependent on labor and language. Therefore the technical and practical interests of knowledge are not regulators of cognition which have to be eliminated for the sake of the objectivity of knowledge; instead, they themselves determine the aspect under which reality is objectified, and can thus be made accessible.
to experience to begin with. They are the conditions which are necessary in order that subjects capable of speech and action may have experience which can lay a claim to objectivity. Of course the expression "interest" is intended to indicate the unity of the life-context in which cognition is embedded: expressions capable of truth have reference to a reality which is objectified (i.e. simultaneously disclosed and constituted) in two different contexts of action and experience. The underlying "interest" establishes the unity between the constitutive context in which knowledge is rooted and the structure of the possible application which this knowledge can have. (Habermas 1973: 9)

When the emphasis in science is on technical control it becomes a productive force. "As civilization has become increasingly scientific, the dimension within which theory was one directed toward praxis has become correspondingly constructed" so that "expanded technical control over nature and a continually refined administration of human beings and their relations to each other by means of social organization" is demanded. The relationships of power underlying this control become ever more powerful by virtue of the fact that they may not be seen through by a mechanistic image.

In this process the relationship of theory to praxis can now only assert itself as the purposive-rational application of techniques assured by empirical science. The social potential of science is reduced to the powers of technical control - its potential for enlightened action is no longer considered. (Habermas 1973: 254)

The application of technique in an environment viewed as "stuff" takes the ends or purposes of that activity to be self-evident. This apparently self-evident end, however, turns out to be simply the maintenance of the system. This relating of means to ends without consideration of ends them-
selves may be termed instrumental reason. Empirical-analytic science is founded on an interest in and helps support a social world in which the person is divested of responsibility and is thought to be "unreasonable" if he desires to act in ways not commensurate with modern institutions. The more such a science is accepted as the means to comprehend the social world the more will the social world tend to conform to that image. The debate about scientific method thus becomes a practical question, for in order to regain for the person an element of conscious practical decision, the illusion must be broken that the world itself, or a scientific construction, tells him directly how he should act.

First, production processes were revolutionized by scientific methods. Then expectations of technically correct functioning were also transferred to those areas of society that had become independent in the course of the industrialization of labor and thus supported planned organization. The power of technical control over nature made possible by science is extended today directly to society: for every isolatable social system whose relations can be analyzed immanently in terms of presupposed system goals, a new discipline emerges in the social sciences. In the same measure, however, the problems of technical control solved by science are transformed into life problems. For the scientific control of natural and social processes - in a word, technology - does not release men from action. Just as before, conflicts must be decided, interests realized, interpretations found - through both action and transaction structured by ordinary language. Today, however, these practical problems are themselves in large measure determined by the system of our technical achievements.

(Habermas 1970: 56)

Horkheimer terms the form of reason which takes as its task the relation of means to presupposed system goals.
subjective reason. Reason in this case is simply a faculty of the mind which relates means to ends. Aims or purposes in themselves are never deemed reasonable or unreasonable. We may simply decide only whether the means selected are appropriate or not. Any decision as to choices of courses of action related to "values" is deemed a matter of "taste". A discussion of the merits of aims is deemed meaningless. "From the subjective approach, such a discussion is possible only if both aims serve a third and higher one, that is, if they are means, not ends." (Horkheimer 1974a: 6)

The difference between this connotation of reason and the objectivistic conception resembles to a certain degree the difference between functional and substantial rationality as these words are used in the Max Weber school. Max Weber, however, adhered so definitely to the subjectivistic trend that he did not conceive of any rationality - not even a 'substantial' one by which man can discriminate one end from another. If our drives, intentions, and finally our ultimate decisions must a priori be irrational, substantial reason becomes an agency merely of correlation and is therefore itself essentially 'functional'. Although Weber's own and his followers' descriptions of the beaurocratization and monopolization of knowledge have illuminated much of the social aspect of the transition from objective to subjective reason . . . Max Weber's pessimism with regard to the possibility of rational insight and action, as expressed in his philosophy, . . ., is itself a stepping-stone in the renunciation of philosophy and science as regards their aspiration of defining man's goal. (Horkheimer 1974a: 6fn.)

Habermas describes the ideological role of this form of reason and its apparently self-evident validity. "(T)he perpetuation of objectively absolute domination", argues Habermas, "is concealed through the invocation of purpose-
rational imperatives." (Habermas 1970: 85) In this fashion a positivistic, mechanistic world-view helps in the construction of a life-world and a society which reflects and to a large extent may be accounted for by that world-view. In present-day society people have been persuaded by means of assent to a scientific world-view and its concommitant faith in the expert that right and wrong courses of action may be distinguished by the application of scientific rules to reality. Even though their consulting the expert belies the centrality of their own decision making in the practice of life, this fact does not come to consciousness and a technical knowledge of the organization of knowledge in society is not made available.

Gadamer describes the technicalization of social life as a general process as follows:

The spontaneity of the one who makes use of technology is in truth precisely by means of this technology more and more eliminated. He must fit into the rules of the matter and to that extent renounce "freedom". He is dependent on the correct functioning of the technology. (Gadamer n.d.: 25)

Gadamer uses the examples of traffic psychology and health-care systems to further describe this process. That the individual is required more and more to unlearn the ability to make instant practical decisions can be seen in the breakdown of traffic systems. The malfunction of a traffic light inevitably results in loss of life and limb when simple decisions may have prevented it. Our trained orientation to the observance of rules decreases our ability to make decisions. In the example of health care practice the goal of health becomes
a meaningless problem. The practice of health care involves primarily the creation of specialists who learn to distinguish situations and make diagnoses of them according to specified rules. In this sort of society "The pigeon-hole into which a man is shoved circumscribes his fate." (Horkheimer 1974a: 23)

This instrumental reason or one-dimensionality in which science and technology play their role both as ideology and as productive and planning forces is the concrete manifestation, as it were, of positivism. A scientific view which states, as an eternal principle, that humans behave in ways determined by outside forces has helped create a situation in which this is almost true because of the acceptance of the view. The human betterment expected from mechanism by thinkers from St. Simon to Lundberg is disillusion.

Mastery of nature has not brought man to self-realization; on the contrary, the status-quo continues to exert its objective compulsion. The factors in the contemporary situation - population growth, a technology that is becoming fully automated, the centralization of economic and therefore political power, the increased rationality of the individual as a result of his work in industry - are inflicting upon life a degree of organization and manipulation that leaves the individual only enough spontaneity to launch himself on the path prescribed for him. (Horkheimer 1974b: 4)

In his novel, The Man Without Qualities, Robert Musil deals with the theme of the concretization of positivism. The repressive and technical nature of our institutions and even our language is able to serve at the same time as a panacea for even stomach-aches. He describes a couple walking down a street in Vienna knowing that they are in their "proper
place in a capital city that was also an imperial residence" and that, "They had their initials significantly embroidered on their underclothing." (Musil 1965: 4) They witness a traffic accident in which a pedestrian is either seriously injured or killed by a truck and a crowd gathers around the victim.

The lady and her companion had also approached and, peering over heads and bent backs, contemplated the man lying on the ground. Then they stepped back and stood hesitating. The lady had a disagreeable sensation in the pit of her stomach, which she felt entitled to take for compassion; it was an irresolute, paralysing sensation. The gentleman, after some silence, said to her:

"These heavy lorries they use here have too long a breaking-distance."

Somehow the lady felt relieved at hearing this, and she thanked him with an attentive glance. Though she had doubtless heard the expression many times before, she did not know what a breaking-distance was, nor had she any wish to know; it was sufficient for her that by this means the horrible happening could be fitted into some kind of pattern, so becoming a technical problem that no longer directly concerned her. (Musil 1965: 5)

Even the way we communicate with one another takes place on technical grounds. Feelings in the pits of stomachs are taken care of by a technical language which makes every experience fit a normal pattern. The system thus can be seen as continuing as it should no matter how much death and violence we encounter.

The concern of the lady in Musil's novel is similar to that of the modern sociologist. In concerning ourselves simply with depicting trends and patterns we absolutize reality so that objective knowledge is seen only in terms of what exists. A convenient packaging of social reality is produced
in which the necessary existence and relation of the objects of the description is assumed. Weber's iron cage has become a metaphysical precept. The divorce of ethical considerations from scientific inquiry is in itself an instrumentalist ethic. The adapting to and fitting in with present conditions is seen implicitly as the Good. The efficient functioning of the present system becomes the raison d'être of social theory and criticism. The acquisition of accurate information about society and social conditions is a necessary ingredient in changing conditions, but:

What is singular about the "rationality" of science and technology is that it characterizes the growing potential of self-surpassing productive forces which continually threaten the institutional framework, and at the same time, set the standard of legitimation for the production relations that restrict this potential. The dichotomy of this rationality cannot be adequately represented either by historicizing the concept or by returning to the orthodox view: neither the model of the original sin of scientific-technical progress nor that of its innocence do it justice. (Habermas 1970: 89)

A sociology which defines trends and makes them absolute is thus an ideology on behalf of adaptive behavior. A fitting in with present conditions is taken to be a self-evident aim. There is now no difference between purposive-rational action and conscious interaction on the part of either humans or human sciences. "The concealment of this difference proves the ideological power of the technocratic consciousness." (Habermas 1970: 107)

As Gadamer, Habermas and Marcuse have pointed out, the generation of information about present conditions, al-
though repressive in its present social scientific context, is necessary also for the production of any change in those conditions. The difference for the human sciences between the two situations is one of an underlying perspective. In the repressive context the information attained is seen as constituting an inevitable set of conditions which we, as humans or as scientists, must fit into. The reservations on principle against value or ethical considerations in the conduct of such inquiry appears at best curious in modern social science. An orientation to human freedom on the part of human science does not deny the determining aspect of social conditions.

Human freedom is finite, and this finiteness manifests itself negatively in its lack of absolute creativity and positively in its dependence on others. Consequently it is just as incorrect to claim that man creates the situation as it is to assert that he is determined by the situation. (Strasser 1967: 508)

The task of empirical human science can be to point out those things on which our freedom is dependent at any given time, to point out the boundaries of freedom. Although sociology is not expected to study freedom as such, an orientation to fact and condition, in full awareness of the character of freedom, is necessary for providing human science with direction, for connecting it explicitly with interests for which there need be no apology. Positivistic sociology, in its pretention to value freedom, can only be oriented toward mastery and control in which human beings are the means to
sociologically perfect relations. The alternative lies more in a difference in background assumption and orientation than in method.

Sociology is the science of human freedom and of all the obstacles this freedom encounters and overcomes in part. The other human sciences, . . ., are distinct from sociology only through the limitation of the direction taken by the effort (to overcome the obstacles) and by the selection of the obstacle to overcome. The reality studied by all these sciences is the same - namely, the human condition, viewed in the particular light thrown upon it by a specific method. (Georges Gurvitch quoted from Strasser 1967: 511-12)

An argument for value freedom is a value-laden argument. Science is of little human value if it accepts as its value the reification of a scheme of relations amongst objects and sees understanding as simply the most convenient packaging of the facts of experience. Strasser outlines four conclusions resulting from the dialectic between human freedom and social determination.

1) The reality of human freedom can neither be disproved nor proved by empirical methods, for this freedom is the basis of all human activities, including that of pursuing science. . . .

2) Even though empirical human science works with exact, statistical methods, it does not imply a deterministic philosophy.

3) Man's freedom is presupposed in all human sciences. This freedom makes the scientific discourse in question possible; consequently it cannot be a term of this discourse. In other words, freedom is not a "factor" in the empirical sense.

4) Empirical human science is a complex of sciences, all of which throw light on the finite aspect of human existence. They determine the boundaries
and the conditions of the concrete exercise of human freedom. Thus they tell us, albeit indirectly, in what concretely the freedom of individuals consists. (Strasser 1967: 512)

The difference between absolutizing method and treating it in the above fashion leads ultimately to a difference in conceptions of knowledge and the potential purpose of science in society. If we view knowledge as the passive reception of images which can be verified through a contrived notion of intersubjectivity and as an expertise which can then be applied to the world, we are proceeding unaware of the real nature of our knowledge and are taking an ethical and political stance which remains unaccounted for in our pretension to value-neutrality and objectivity.

An empirical human science which searches for absolute regularity and certainty with reference to human beings is taking such a position. The concealment of the ethical and political stance in this formula is part of the ideology which seeks to convince people that they are objects in order to treat and control them as such. Horkheimer's statement about the last remaining remnant of spontaneity now becomes clear. The assent of the person is a small but necessary part of his own repression and the assent is the result of an ideology.

The resulting fear of not fitting in is found in science as well as in other parts of society. Here we see the kernels of truth in symbolic interactionism's emphasis on the significant other and in Kuhn's work on paradigms and
scientific community. The personal courage required to de- 
viate from repressive, technically useful trends such as is 
found in Immanuel Velikovsky is rare. That this process 
rests on personal courage is aptly described by Carlos 
Castaneda. As an anthropologist cum sorcerer's apprentice 
Castaneda was experiencing the same sort of insecurity and 
anxiety concerning the self-confidence necessary to carry 
through with one's convictions and commitments. He confesses 
to his teacher, Don Juan, that he sometimes believes that he 
knows what he should do but lacks the necessary self-confidence, 
and receives the following reply:

"I'm afraid that you are confusing issues", he 
said. "The self-confidence of the warrior is 
not the self-confidence of the average man. The 
average man seeks certainty in the eyes of the 
onlooker and calls that self-confidence. The 
warrior seeks impeccability in his own eyes and 
calls that humbleness. The average man is 
hooked to his fellow men, while the warrior is 
hooked only to himself. Perhaps you are chasing 
rainbows. You're after the self-confidence of 
the average man, when you should be after the 
humbleness of a warrior. The difference between 
the two is remarkable. Self-confidence entails 
knowing something for sure; humbleness entails 
being impeccable in one's actions and feelings. 
(Castaneda 1974: 15-16)

John Dewey rejects the possibility of absolute certainty 
philosophically but celebrates its possibility in practice, 
in the fashion of Lundberg and Lazarsfeld, by actively con- 
trolling the world.

Knowing is, for philosophical theory, a case of 
specially directed activity instead of something 
isolated from practice. The quest for certainty 
by means of exact possession in mind of immutable 
reality is exchanged for search for security by 
means of active control of the changing course
of events. Intelligence in operation, another name for method, becomes the thing most worth winning. (Dewey 1960: 204)

Here again, however, we encounter the problem of the aim of science and of other action. For Dewey, certainty seems to be a goal in itself, control for the sake of control. This also, however, involves control of the controlling activities, since, if any action which can have effect is allowed, the resulting reality is then possibly one different from that controllable by the ascendant "operational intelligence". Even this view, when pushed to the extreme, involves the notion that our world is, at least in principle, changeable.

Heisenberg's physics understands the activity of modern physics, which has essentially adopted Dewey's view, to be studying not nature, but our relationship with it.

(Contemporary physics cannot study the behavior of a natural phenomenon as it is in itself, entirely apart from the human effort to comprehend it, but rather must find its subject matter in the active interplay between man and external nature. (Leiss 1972: 88)

It was originally the discovery of the predictability of a segment of reality that produced means of control, and now it is the possession of means which produces predictability. Scientific sociology specifies our relationship to the social world, not the essential nature of the social world. Sociology's reliance on a classical scientific model is not only out of date; it thereby fails to understand the possibility of its effect and thereby also the essential changeability of a world which it wants to see as regular and immutable. Even the
kind of control which Dewey speaks of points to the change-
ability of the world. The view of the social as external
and constraining is the modern sociologist's conception of
a desired relationship to the world and is thereby, in as
much as it is part of an official ideology, a force in pro-
ducing constrained social relations.

An awareness of this, however, can be brought to bear
on an enlightened conception of society and of social inquiry.

The separation between individual and society in
virtue of which the individual accepts as natural
the limits prescribed for his activity is
relativized in critical theory. The latter con-
siders the overall framework which is conditioned
by the blind interaction of individual activities
(that is, the existent division of labor and the
class distinctions) to be a function which
originates in human action and therefore is a
possible object of planful decision and rational
determination of goals. (Horkheimer 1972: 207)

Although such planful decision can never be a completed project,
relative to Heisenberg, reservations on principle against it
are ideologically dangerous. "Technocratic consciousness re-
fects not the sundering of an ethical situation but the
repression of "ethics" as such as a category of life."
(Habermas 1970: 112)

Information generated by this form of consciousness
is only administratively useful. The administered world is
reaffirmed in the concern for prediction prevalent in nomo-
logical science. Its pretension to disinterestedness amounts
simply to a cover-up. A form of knowledge which claims not
to be connected with interest has as its interest, an interest
in domination. The interest, in turn, which seeks a compre-
hensive view of what is, but which also retains the right to judge it, has as its interest an emancipatory interest. It is this sort of interest which not only is aware of the inherent relation of knowledge and interest but which leads to a closer relation between them.

The quest for certainty and predictability, undergirded by a metaphysic of externality and constraint, which views the world as neutral "stuff", thereby precludes any actual attempt to evaluate and change. An expectation that the world tells us what it is is simply an implicit positive evaluation of a certain organization of experience.

The world does not contain any information. It is as it is. Information about it is created in the organism through its interaction with the world. To speak about storage of information outside the human body is to fall into a semantic trap. Books or computers are part of the world. They can yield information when they are looked upon. We move the problem of learning and of cognition nicely into the blind spot of our intellectual vision if we confuse vehicles for potential information with information itself. We do the same when we confuse data for potential decision with decision itself. (Illich 1973: 93)

This confusion springs from the "need" for certainty. The quest to fit into a technocratic apparatus is present also in the sociologist who nominalistically imposes a form of predictability on the world. The chasing of rainbows by the sociologist is a search for false confidence, an ideologically dangerous search. The completed pictures which are sought after implicitly deny the transformability of what we are drawing pictures of. The description of actual conditions does not necessitate absolutizing them.
The need for absolute intellectual certainty, Adorno argued, was likely to be a reflex of personal insecurity: 'freedom is never given, always threatened. . . . The absolutely certain as such is always unfreedom . . . . It is a mistaken conclusion that what endures is truer than what passes'. (Jay 1973: 68-9)

Thus a sociological practice which dismisses the need for certainty and the absolutization of reality, although it cannot change the world, is necessary for any sociology to in any way enlighten the activities of sociologists themselves. This task of knowing is necessarily also philosophical and personal. The aesthetic and personal satisfaction resulting from the production of convenient pictures of the world which reinforce our membership in an academic community is dangerous although comforting. If we ourselves are not included in our analyses, a practice which is simply comforting and adaptive will follow. The control of our own behavior which is argued for in scientific method involves also the fear of not fitting in with a paradigm, personal or scientific. Once we recognize, however, the origins and practical rootedness of our own activity we may also decide freely about what actual risks are involved in not fitting in. The greatest risk, objectively, is in adapting.
REFERENCES


