Organization Theory as a Positive Science

Abstract and Keywords

Positive science applied to organizations seeks to build a body of knowledge that consists of general causal theories about organizations and their members. These theories are empirically validated through scientific methods. These theories are positive in that they explain how the world works, rather than being normative, that is, prescribing what ought to occur. In positivist organizational science, organizations are explained as being driven by the environment. Organizational science has made considerable progress to date through using the positivist approach. To the degree that organizational portfolio theory is corroborated in future research, it may shed light beyond that presently available from traditional, non-positivist analyses of organizational change. It could eventually help take practice beyond the more customary, ideationalist approach, of trying to change organizations by seeking ‘to change managerial thinking’.

Keywords: positive science, scientific methods, organizational science, organizational portfolio theory, ideationalist approach
1.1 Positivism in Social Science

Science is a body of knowledge that consists of general explanations (Toulmin 1962). It is pursued through the systematic study of phenomena, which involves constructing theories and comparing them against empirical evidence (Chalmers 1999). The application of this approach in the natural sciences has led to great increases in knowledge (Boorstin 1983). Positivism holds that the same approach applied to society will increase knowledge about human affairs (Comte 1853). Thus positivism takes the natural sciences as a role model. This modeling means that aspects of methods used in the natural science are adopted by social science (Phillips 1992). It also means that aspects of the theory and world view of the natural sciences are adopted by social science (Burrell and Morgan 1979).

The natural sciences have revealed that underlying the surface appearance of the natural world there are deeper structures of regularities of causes and effects (Boorstin 1983). Some of these underlying mechanisms are simple, though some are complex. Biological and other scientific theories are often functionalist, in that they explain the occurrence of an attribute by its beneficial outcome, e.g. survival. The view of human beings is of animals that struggle for existence within their environments. As their environment changes over time, so too must the human beings. Darwinian selection operates against those humans who do not fit their environment and so fail to survive. However, human adaptation also occurs through problem-solving, so that some behavior is changed through human choice. Nevertheless, the generalized capacity for adaptive problem-solving is intelligence, and so Darwinian selection tends to favor intelligence. This biological view is rather tough-minded, in that it includes some processes that are unappealing and contrary to values, e.g. infanticide to control population numbers. The emphasis of the biological view is upon revealing the mechanisms that actually occur, even if they go against values.

Positivism seeks to transfer many of these aspects of the natural sciences across to the study of society and thereby to create a social science. The orientation to the objects of inquiry (i.e. societies and their members) is objective, in that they are observed from without by detached observers. The aim is to identify social facts, that is, causes that stand apart from people and constrain them, forcing them to behave in certain ways—even sometimes regardless of the ideas in the minds of the people involved (Durkheim 1938). A prominent type of sociological theory is functionalism, which holds that the social structure is shaped by the imperative to adapt so as to provide fundamental societal needs (Parsons 1966). The benefits of some aspects of the social structure are
not apparent to societal members, i.e. they are latent functions (Merton 1949), so that the functions are objective characteristics. Harris (1977) offers objectivist, positivist, functionalist explanations of phenomena that seem not to be explicable positivistically, such as cultural taboos, e.g. cow worship in India removes the temptation to eat, and thus lose, an enduringly valuable source of milk, cooking fuel, and traction for the farmer.

Social science, however, has long been marked by debate between positivism and anti-positivism. The main anti-positivist philosophy regarding the study of human society is ideationalism (Burrell and Morgan 1979). In its boldest form this rejects (p. 41) the suggestion that the natural sciences can be applied to human society. Ideationalism emphasizes the role of ideas and values as causal influences, and sees human actions as the results of choices based on free will (Schreyögg 1980). Reality is seen as being socially constructed (Berger and Luckmann 1966). Ideationalism also emphasizes that the phenomena to be explained include consciousness, cognition, feelings, and symbols, which lie, to a great degree, within the human mind, and so involve subjectivity (Berger and Pullberg 1966; Schutz 1967). Much of subjective experience is bound up with language, so that language becomes a focus of inquiry. Ideationalists therefore tend to liken social research to learning a language, rather than doing natural science. Thus ideationalism tends to see the humanities as the more appropriate role model. Given that a language tends to be specific to a society, the tendency of ideationalists is towards understanding particular people in a locale, including their language, art, and culture (e.g. laws, customs, humor, etc.). Ideationalism explains human behavior as action whose meaning is known to the actor and to the people of that culture. These actions are oriented to attaining the ends that the individual values (Rex 1961). The respect for language can extend to philosophical arguments that all human motivation is context-specific and localized, so that broad general psychological theories about motivation are held to be unsound (Winch 1958). Thus ideationalism differs from positivism in fundamental regards and can become anti-positivist by rejecting, or casting doubt upon, positivist precepts such as generalization, objectivism, determinism, and causation being external to the mind of the individual (Burrell and Morgan 1979).

1.2 Positivism in Organizational Science

Positivism in organizational science seeks to create general theories about organizations and their members, which are reminiscent of the powerful universal laws found in the natural sciences. The aim is to reveal causal regularities that underlie surface reality. Explanation is primarily in terms of causes that determine effects. The formal logic of the
explanation is that an independent variable, $x$, causes $y$, the dependent variable (Blalock 1961). The preference is for simple theories, though recourse may be had to more complex theories for those phenomena for which simple theories prove inadequate. Thus in formal terms, the explanation may be made more complex by saying that besides $x$ causing $y$, there is another variable, $u$, that is also a cause of $y$ (Blalock 1961). Also, the explanation may be made more complex by saying that $x$ causes more than $y$, by $x$ being also a cause of another dependent variable, $v$. Again, the explanation may be made more complex by including a moderator, such as saying that $x$ causes $y$ where the moderator $z$ has a high value, but not where $z$ is low (Galtung 1967).

Alternatively, the explanation may be made more complex by including a mediator, such as saying that $x$ causes $y$ through the mediating variable, $w$, so that the more complete causal model is that $x$ causes $w$ causes $y$ (Galtung 1967). A causal explanation may contain both moderator and mediating variables, and may contain many causes and effects, so that complexity of the explanation is increased. In organizational positivism, as in all positivism, such theorizing is accompanied by empirical study, to test and refine the theories (Galtung 1967). The empirical work makes use of scientific methods, such as quantitative variables, statistical analyses and controls for confounding causes, in order to validly assess whether the theoretical causal models accord with the empirical evidence (Blalock 1961; Cook and Campbell 1979).

Organizational science aims to create valid explanations that capture how the organizational world really operates, rather than to broadcast views that may better accord with values but which are not accurate characterizations of the world as it exists. Thus organizational science is value-free and may be quite tough-minded in some of its aspects. Positivism makes a distinction between positive science, that is, positive statements that describe the actual world and its causation, and normative science that makes prescriptions based on value judgments (Friedman 1953; Simon 1997). Positive science states that factor, $x$ causes $y$. As such it can inform prescription (i.e. normative science), in that a person who wishes to attain $y$ will know to do $x$. However, the preference for $y$ comes from outside of science and reflects values and so is not itself the province of science (Weber 1968). In this way, positivism draws on the philosophical distinction between facts and values, which linguistically is the difference between propositions about ‘is’ and ‘ought’.

Sociological positivism holds that phenomena, or social facts, should be explained by other social facts, i.e. objective conditions, rather than in the consciousness of social actors (Durkheim 1938). Positivist social theories explain human behavior by causes that lie in the situation and constrain the individual to act in certain ways, thereby conforming to the pressures of the environment. In organizational theory, positivism explains aspects
of the organization or its members by the environing situation. In particular, in structural
contingency theory, the environment \( (e) \) causes a certain level of the contingency
variable \( (c) \), which in turn causes the organization to adopt a certain structure \( (s) \); hence
in formal terms \( e \) causes \( c \) causes \( s \). Thus, the degree of uncertainty in the environment
\( (e) \) affects task uncertainty \( (c) \), which causes organizations to alter the degree of
differentiation and integration \( (s) \) of their organizational structures (Lawrence and
Lorsch 1967). Failure to conform to the situational requirements posed by the
environment leads to reduced functionality for the organizations, forcing them and their
managers to adapt. In this way causality comes from outside of the individual
organizational member.

(p. 43)

An exemplar of sociological positivism, in organizational theory, is the theory of
structural differentiation in organizations propounded by Blau (1970, 1972), which is
positivist both in its theory and methods. The phenomenon being explained, structural
differentiation, is the tendency for an organization, as it grows in size, to become
composed of progressively more and more specialized subunits. This concept (and its
name ‘differentiation’) strongly echoes the biological concept of the same name. The
theory is highly general, potentially applying to any organization in any setting. The
theory is put forth in a series of propositions, with subordinate propositions being
deduced from major propositions and assumptions, in the manner of a formal theory in
the natural sciences (Blau 1970, 1972). The explanatory mechanisms are cause and
effect. A major cause is size, which is the number of members of the organization, which
is an objective, situational characteristic, rather than a subjective idea. The mechanisms
are functionalist, promoting organizational efficiency.

Blau and Schoenherr (1971) present evidence supporting the theory from studies that
measure variables and compare across organizations, using multivariate statistical
analysis. Subsequent studies in other organizations (Blau 1972) and other countries have,
in the main, supported the theory, showing generality across different types of
organization and nations. For instance, the positive relationship between organizational
size and vertical structural differentiation (the number of levels in the hierarchy) has
been found in over thirty empirical studies of organizations (Donaldson 1996a: 135–7).
These studies range in types of organization across governmental (Beyer and Trice 1979),
insurance (Agarwal 1979), manufacturing organizations (Grinyer and Yasai-Ardekani
1981), and labor unions (Donaldson and Warner 1974). These studies also range in
nations across Germany (Child and Kieser 1979), Hong Kong (Wong and Birnbaum-More
1994), India (Shenoy 1981), Jordan (Ayoubi 1981), Poland (Kuc, Hickson, and McMillan
1981), and the United Kingdom (Child 1973). While many studies have established
correlations through cross-sectional research, some have studied change across time and thereby provided evidence of the causal effect of size on structural differentiation (Meyer 1972; Marsh and Mannari 1989).

The theory goes beyond surface appearance by revealing that structural differentiation increases at a declining rate as organizations increase in size (Blau 1970, 1972). It also shows that the ratio of managers to employees declines as size increases (Blau 1970, 1972), thereby contradicting the erroneous, commonsense, impression that this ratio must rise with size, because bigger organizations have taller managerial hierarchies. The decreasing proportion of managers to size (i.e. total employees) as size increases, means that the cost of administration is decreasing with size growth, so that there are economies of scale in administration, which is a functionalist outcome from the changes in organizational structure as size grows. The situational causation that Blau and Schoenherr (1971) argue theoretically, and show empirical support for, is that the environment, the size of the population in a state of the United States, causes the size of a governmental organization in that state, which causes its structural differentiation (for further discussion, see Donaldson 2001:112–14).

1.3 Positivism and Functionalism

Blau (1972: 13 fh.) is explicit that his theory of the effect of size on structural differentiation is positivist, in the tradition of Durkheim’s rules of sociological method:

Another assumption is implied here: the prevailing characteristics of organizations, as distinguished from those in particular organizations, can be explained in terms of the influence of antecedent conditions in organizations (or their environment) without reference to the psychological preferences or decisions of individual managers, because these social conditions greatly restrict the options of managers who pursue an interest in efficient operations. This principle derives from Durkheim (1938: 110): ‘The determining cause of a social fact should be sought among the social facts preceding it and not among the state of individual consciousness.’

In positivist organizational theory, the reason why the ideas in the minds of the social actors make no independent contribution to the explanation is not that they have no effect, but rather lies in the logic of functionalism. Clearly, most organizational changes occur because of decisions by the management or other parties. Thus ideas in the minds of these social actors are part of the process that produces the changes. The decision-
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makers may consider a range of choices and then choose between them. However, as Blau (1972: 1361.) insightfully states, the decision-makers will choose the option that is most effective. Given that only one option is the most effective, then it is predetermined that the decision-makers will choose that one. Thus positivism gains force when united with functionalism, so that the option that is chosen has to be chosen because of its functionality, that is, with respect to its beneficial outcomes. If all options are equal in their outcomes, then decision-makers seeking functionality could choose any option without detriment. However, in variants of functionalism such as structural contingency theory, the optimal outcome is produced only by the structure that fits the contingency, i.e. the situation (e.g. Lawrence and Lorsch 1967). Thus, in any situation, to attain the best outcome, the decision-makers must choose the structure that fits that situation. In this way the situation causes the structure, with the ideas of the decision-makers making no independent contribution to the explanation of the structure. Hence the positivist premiss that explanation lies in situational causation, with the consciousness of the actors being superfluous, is made cogent when joined with functionalism. In particular, where functionalism is of the type that holds that optimal functionality arises from fitting the organization to its situation, then there is a situational, effectiveness-based, imperative that forces the choice.

Of course, the choice is forced because only one option leads to organizational effectiveness and the decision-makers are using organizational effectiveness as the criterion to choose between the options. Thus the decision-makers are placing a high value on organizational effectiveness. This is a value in their minds. Therefore, in that sense, the positivist, functionalist argument may be said to be predicated upon a condition of the ideationalist type. Blau (1972: 13 m.) makes this explicit with his statement that the organizational managers value efficiency. However, if the organizational decision-makers fail to choose the option that best fits the situation and produces the best outcomes, then the organization will suffer sub-optimal performance. The objective consequences that would follow from not choosing the option that best fits the organization to its situation creates pressures on organizational managers that tend to force them to choose the option that fits. Severely low performance would cause the organization not to survive, if it is in a competitive situation, as are many business firms (the most numerous type of organization). Thus organizations that fail to adopt the most effective option tend to be eliminated from the population, and so management have an incentive to avoid such a catastrophe. Sub-optimal performance by a firm would leave it vulnerable to takeover, which provides an inducement to incumbent management to choose the effective option. Again, sub-optimal performance by managers of firms leaves them open to sanctioning, and possible replacement, by their super-ordinate managers or directors. While imperfections in control, or the presence of organizational slack, may allow the managers of an organization to delay adoption of the most effective option, so
that misfit can exist for some time, eventually the situational imperative will tend to prevail. Thus among the population of extant organizations, there will be an irresistible tendency for organizational managers to choose options that conform to the situational imperative. Thus the situation will determine the structure with no moderation by managerial ideas.

In this way functionalism explains why positivism works, and provides a theoretical rationale that gives credence to the contention of Durkheim (1938) that causality lies outside the consciousness of people. In his terms, the social fact of the organizational structure that decision-makers choose is caused by two social facts:

1. that only one structure objectively fits the situation in that only it will produce the most functional outcomes; and
2. that organizational decision-makers are under situational pressures (from competition, head office, directors, takeover threat, etc.) to give priority to attaining the most functional outcome for their organization.

(p. 46)

Thus the argument that Blau (1972:13 fh.) makes contains an important theoretical point that applies generally to organizational positivism, providing it with a functionalist rationale.

Going further, because organizational decision-makers are forced by the situation and the performance imperative to adopt a particular option, they may do so even if it runs counter to their thinking. Thus their attitudes and values may incline them to prefer another option, which, nevertheless, fits the situation less well and so would produce less organizational effectiveness. Despite these initial preferences, the situational imperative is strong enough to override them, so that decision-makers acquiesce to the option that is dictated by the situation (Donaldson 1996a: 172–3). While the reluctantly chosen option is the immediate cause of the organizational change, it would not have been predictable from the initial attitudes and values of the decision-makers. Thus the consciousness of the decision-makers, independent of the situation, is not the cause of the option eventually put into practice. This conceptual point gives added meaning to the positivist proposition that the determining cause of the option chosen is in the situation and not in ‘the state of individual consciousness’ (Durkheim 1938:110).

Positivism in social science draws on the biological view of humans to depict them as struggling for existence in a challenging environment, often competitively with one and other, and as being forced to adapt or perish. Applied to organizations, this leads to the positivist view of organizations as being shaped by their environments through either adaptation or selection.
1.3.1 Adaptation in Organizational Positivism

In organizational science, positivist theories of organizational adaptation include the theory of organizational adaptation in structural contingency theory (Donaldson 1995a, 1996b, 2001). This explains organizational structure by the need to fit the contingencies, such as organizational size (Child 1975; Khandwalla 1973) or technology (Woodward 1965). Fit of organizational structure to the contingencies leads to higher performance, whereas misfit leads to lower performance (Keller 1994). To avoid the damage caused by continuing low performance, organizations in misfit make adaptive changes, by adopting a new organizational structure that brings them into fit (Donaldson 2001). This process of organizational adaptation to the situation is seen in positivist studies of strategy and structure.

Strategy has been said to lead to structure (Chandler 1962). Strategy means an intention, that is, an idea, in the mind of managers, particularly the senior managers of an organization, and is therefore an ideationalist phenomenon. However, by acting on these ideas, managers make actual changes to organizations, such as increasing the range of their products, i.e. diversification (Chandler 1962). The degree of diversification actually achieved causes divisionalization, in that diversified firms replace their existing structures, such as the functional structures with divisional structures (Chandler 1962). This is an adaptation, in that the functional structures fitted the pre-existing, non-diversified state, but misfit the new, diversified state, whereas divisional structures fit the new, diversified state. Thus the explanation is of the functionalist type, by reference to beneficial outcomes.

Empirical support comes from case studies and comparative, quantitative statistical studies of corporations. Studies show a positive relationship between diversification and divisionalization in the United States (Chandler 1962; Rumelt 1974; Fligstein 1985; Palmer et al. 1987; Mahoney 1992; Palmer, Jennings, and Zhou 1993). Other studies show that the relationship generalizes, by also holding in other countries: Australia (Chenhall 1979; Capon et al. 1987), Canada (Khandwalla 1977), France (Dyas and Thanheiser 1976), Germany (Dyas and Thanheiser 1976), Italy (Pavan 1976), Japan (Suzuki 1980), New Zealand (Hamilton and Shergill 1992, 1993), and the United Kingdom (Channon 1973, 1978). As Pfeffer (1997: 161) remarks, some of these studies show not merely correlation between diversification and divisionalization, but also that diversification precedes divisionalization, corroborating that diversification is a cause of divisionalization. Moreover, the fit between diversification and divisionalization has been shown to be beneficial for performance (Donaldson 1987; Hamilton and Shergill 1993)—supporting the functionalist theory. Again, the poor performance of firms that are in
misfit, through retaining a functional structure when diversified, has been shown to be a trigger for the adoption of the new, better fitting structure (Donaldson 1987). This empirically supports the positivist view that firms are forced to adapt to their changing circumstances in order to limit injurious outcomes (i.e. low performance). Among large firms, the empirical evidence is that adaptive change is overwhelmingly through individual, ongoing firms changing their strategies and structures (Donaldson 1995b: 73–5, 2001:168–70).

1.3.2 Selection in Organizational Positivism

The other wing of organizational positivism stresses not adaptive change by ongoing organizations, but changes in the population, through selection. The selection mechanism for attaining organizational change is that organizations that misfit their ecological niche fail to survive and newly founded organizations better fit their ecological niche, i.e. functionalism. Organizational ecology has drawn on modern-day evolutionary biology to explain the rates at which organizations in an industry are founded and disbanded in terms of the number of organizations in that industry (the ‘population density’) (Hannan and Freeman 1977). The vital (i.e. founding and disbanding) rates in one sub-population can affect the vital rates in another sub-population. Also founding rates can be affected by prior founding rates (Hannan and Freeman 1989). Organizational age also affects organizational mortality rates (Hannan and Freeman 1989). Furthermore, there is evidence that fit of organizational strategies to the ecological niches affects disbanding rates, such that specialists fit fine-grained and generalists fit coarse-grained niches (Hannan and Freeman 1989). There is empirical evidence of validity and generality from studies that feature the development and use of scientific methods (Hannan and Freeman 1989). The theory and methods of organizational ecology combine to make it a case of positivism in one of its strongest forms in organization studies (albeit with some limitations (Donaldson 1995b)). An empirical study of the changing organizational forms of gasoline stations shows that this is caused both by cases of adaptation of ongoing stations and by disbandings and new foundings among the population (Usher and Evans 1996). This provides support for both the positivist mechanisms, adaptation and selection, through which the situation molds organizations, and suggests that both may operate simultaneously in some populations of organizations.

In sum, positivist organizational theory shows that organizations are molded by their situation. This is seen in the organizational theories of structural contingency theory and organizational ecology. The processes whereby the situation molds the organization are functionalist: adaptation and selection. Other organizational sociologists, however, follow non-positivist approaches, such as interpretist, conflict, critical, postmodern, power, or
social action theories, or social constructionism (Aldrich 1992; Alvesson and Deetz 1996; Clegg, Hardy, and Nord 1996). Organizational sociology has been subject to a vigorous debate between ideationalist, anti-positivism (e.g. Bourgeois 1984; Clegg 1988; Silverman 1968, 1970; Turner 1977; Whittington 1989) and positivism (Donaldson 1985, 1996a).

1.4 Philosophical Issues in Organizational Positivism

The social sciences have been subject to discussions of their philosophical bases that claim to be damagingly critical. Such critical discussions purport to find fundamental philosophical difficulties even with ‘The Idea of a Social Science’ itself, as expressed by Winch (1958), in a book of this title. Thus the program of building a social science has been declared naive and invalid a priori (Winch 1958). This type of philosophically-based critique has been deployed in organizational studies, to declare invalid any attempt to construct a science of organizations, especially of the positivist type (e.g. Silverman 1968, 1970; Clegg and Dunkerley 1980; Turner 1977; Whitley 1977).

Some philosophers of science, however, have presented philosophical arguments that social science is not negated philosophically and is feasible (Kincaid 1996; Phillips 1992). They defend the thesis of naturalism (Kincaid 1996; Phillips 1992), which is that social sciences can be like the natural sciences, the view taken here. More specifically, philosophical defenses are offered of positivism and functionalism (Kincaid 1996). Whereas philosophical critics of social science are wont to question—and indeed dismiss—whole branches of social science based only on very broad characterizations of those branches (e.g. Winch 1958), Kincaid (1996) instead presents a philosophical analysis of social sciences that includes detailed analyses of actual social scientific research. His conclusion is that there is no impediment to building social sciences, similar to the natural sciences (Kincaid 1996). Indeed he argues that the difficulties in creating social science are just the ordinary practical problems faced in doing any good science, such as adequately controlling for confounding influences (Kincaid 1996). These problems are exactly those that positivist social and organizational sciences seek to overcome in their methodology and practice (Cook and Campbell 1979). Thus the implication is that positivism should continue with its traditional agenda rather than halting out of fear that it transgresses some philosophical strictures.

In particular, Kincaid (1996:131–5) examines organizational research in one of its most positivist forms, organizational ecology (Hannan and Freeman 1989), and finds this to be good science. Kincaid (1996: 135–6) concludes of organizational ecology: ‘Hannan and
Freeman's work is thus an exemplary piece of social research, and it shows that good functionalist social science is possible in practice.... Far from being pseudoscience, this functional explanation is arguably as well confirmed as good work in the non-experimental natural sciences. Those who claim that the social sciences are doomed to failure have a lot of explaining (away) to do.'

The philosophical analyses of Phillips (1992) and Kincaid (1996) present a major counter to the philosophical critiques of social science (e.g. Winch 1958). By extension, they provide an effective counter to the derived philosophically-based criticisms of positivist organizational science that have been presented by some organizational theorists (e.g. Silverman 1968, 1970; Clegg and Dunkerley 1980). The trenchant defenses of positivism provided by these philosophers (Kincaid 1996; Phillips 1992) furnish strong reinforcement to the earlier defense of organizational science against philosophically-based criticisms (Donaldson 1985). We turn now to an examination of some philosophical objections to social and organizational science:

- the argument that logical positivism is invalid and therefore so too is positivism
- the argument that functionalism is invalid

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- the argument that positivism entails problematic ontological assumptions
- the argument that positivism fails because it does not use the hermeneutic method.

1.4.1 Positivism is Not Logical Positivism

Positivism is sometimes confused with logical positivism, but many positivists are not adherents of logical positivism. Logical positivism is the epistemological doctrine that science can only deal in observables and that any proposition dealing with unobservables is metaphysical nonsense (Ayer 1936; Bohman 1991). Popper (1959), a philosopher influential on positivism, rejected logical positivism by arguing that unobservables, such as scientific concepts like the atom, are meaningful. From such concepts can be deduced hypotheses about observables, which can be tested against empirical evidence, thereby subjecting the theory to falsification. This view of science as a hypothetico-deductive activity is probably the epistemology that is most common among contemporary positivists.

Falsifying the hypotheses does not necessarily mean, however, that the theory from which they are deduced is invalid. Hypotheses depend not only on the theory but also other, auxiliary sciences, such as the technologies used in measuring the observations
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(Feyerabend 1975). Therefore falsification of hypotheses may lead to improvements in the auxiliary sciences, which subsequently show the hypotheses to be supported. Thus initial disconfirmation of hypotheses can spur fruitful work to improve the auxiliary science, as part of the research program, rather than falsification of the theory (Lakatos 1974; Kuhn 1970). Thus the requirement that a theory be logically falsifiable is not the same as requiring that every failure of its hypotheses must lead to the theory being viewed as false.

Logical positivism influenced the social sciences, particularly psychology where it helped create behaviorism (Schlagel 1979), which sought theories of behavior that made no mention of unobservable states such as thinking or feeling. Behaviorism explains behavior as being shaped by the reinforcement coming from the environment (Skinner 1971). Thus adaptive learning can take place because of its association with outcomes beneficial for the organism. This is a kind of functionalism and marks a connection with biology. However, logical positivism has been largely supplanted in the philosophy of science by views that see unobservable concepts as legitimate (Chalmers 1999). This has fostered the development of non-behavioristic psychology and ‘the cognitive revolution’ (Harré and Gillett 1994). In organizational behavior, this turn towards cognition has led, inter alia, to the view of people as possessing intentions, setting goals, and self-regulating (Bandura 1986). In related moves in the study of human resource management, emphasis has shifted, from the study of the details of task behaviors, to general mental abilities, as the bases of personnel selection tools (Schmidt and Hunter 1998). The rise and fall of logical positivism is an example of shifts in epistemological doctrines within the philosophy of science that have affected organizational science.

Modern positivism in organizational science follows neither logical positivism nor behaviorism. Theoretical concepts are seen as legitimately being abstract and therefore unobservable. Also thinking and feelings and other unobservable processes are accepted as existing and being legitimate topics of study, though this must perforce be through their manifestation in observables, e.g. interview protocol or questionnaire response. Because unobservables have to be inferred indirectly from observables, they may be less reliable than observables and so treated accordingly. Hence positivism seeks objectivity, which is to say high levels of inter-subjective agreement between two or more observers (Popper 1959), and this tends to inhere in observables or other data that are colloquially called objective. This leads to the positivist strategy of seeking to study phenomena by studying objective social facts and then approaching more subjective aspects within that framework (Donaldson 1997). However, this modern positivist caution about the reliability of subjective data is far removed from the blanket disavowal of subjectivity by behaviorism that was spurred by logical positivism. The de-emphasis of subjective states
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in organizational positivism is because they are not the keys to explanation, which, instead, lie in the objective situational causes. Thus the focus on objective conditions in positivism is theoretical, rather than philosophical, in nature.

The problem of the unreliability of some observation statements is a reason for avoiding reductionism and instead favoring the holistic, or macro-scopic, approach of sociological positivism. In organizational science, reductionism holds that theories about organizations should be explained by the behavior of the individuals who compose, or interact with, the organizations. The notion is to provide a supposedly firm base for macro-organizational science by grounding it in the behavior of individuals. This could take the form of psychological reductionism, whereby macro-organizational phenomena are reduced to explanations about the motivations of individuals. However, there is a problem about how far an outside observer can have accurate knowledge about the psychological motivations of an individual. Such motivational states are inherently subjective and private, and the individual may not wish to fully disclose them to an observer. It is one thing for a manager to tell a social scientist about his or her need for achievement (McClelland 1961), but he or she may be coy about fully disclosing his or her needs for money, power, or sex, which may be less socially or organizationally legitimate. Moreover, some strands of psychology hold that individuals deny and are unconscious of some of their important motives (Freud 1925). Also, organizational colleagues may vary in their assessments of the motivations of an individual according to whether they are friends or rivals. Thus there is no secure foundation (p. 52) in psychological, motivational analyses of individuals on which to ground macro-organizational science.

Equally, political analyses explain organizations by their constituent individuals each pursuing their own self-interest. But how is an observer to know what is the real self-interest that the individual privately, subjectively perceives, when political theories hold that people acting politically consciously seek to conceal their true objectives in order to better play the political game (Pettigrew 1973)? Thus the reduction of macro-organizational phenomena to explanations by political models of individuals and their self-interests is as fraught with unreliability as is psychological reductionism.

Given these problems with reductionism, it is best avoided. Instead a better path is the positivist one of seeking to study the social facts, that is, phenomena such as structure or other public organizational characteristics, which are explained by other social facts, such as organizational size or environmental competition that are publicly observable. Both cause and effect are objective characteristics that can be measured reliably, thus providing a secure foundation for organizational science. The variables are at the macroscopic level of the organization and its environment. Thus positivist organizational theory eschews seeking insight in the minds of the individuals and instead seeks what may be
termed 'outsight', i.e. understanding how the organization results from the pressures of the situation.

It should be noted that while modern philosophers of social science are generally highly critical of logical positivism (e.g. Bohman 1991), some accept sociological positivism, which is being advocated in this chapter, as being valid, i.e. holistic or macrosocial (Rosenberg 1995) or functionalist or macrosociological (Kincaid 1996) explanation.

1.4.2 Functionalism is Valid

As we saw above, positivism gains much of its force in organizational science by being underpinned theoretically by functionalism. However, functionalism in sociology has attracted a lot of criticism (e.g. Silverman 1968, 1970), but much of it is misplaced (see Donaldson 1985). Philosophical problems are seen by some to be inherent in functionalism in social science. Functionalist explanation may be criticized as being teleology without a knowing subject (Elster 1983). Teleology refers to explanations of present states of affairs by a purpose that will be realized in the future. However, where the present state of affairs is sustained by a purpose about the future, the purpose can be held by people who are acting in the present. For example, the managers of an organization may do something now with the purpose of improving the effectiveness of the organization in the future (Etzioni 1968). In this case there is a knowing subject, so there is no mystical, disembodied (p. 53) purpose (Hegel 1953) involved in such a functionalist explanation in organizational sociology.

Sociological functionalism posits that the consequences, such as the functions of a social structure, are the causes of that structure. By cause is meant mainly that the functions explain the persistence of the structure (Kincaid 1996). While causes in science usually precede their consequences, the functionalist kind of explanation is not teleological, and has been termed telecausal (Isajiw 1968). In the case of organizational structures in functionalist organizational theory, the functional consequence of the structure feeds back to cause the structure to persist through human intention or Darwinian selection. A manager may see that the structure of his or her organization is producing beneficial outcomes and retain the structure for that reason, so that it persists. Again, a manager observing the outcomes of his or her organization's structure may change the structure to obtain more beneficial outcomes in future. In these cases, of both persistence and change, the manager is acting on the feedback effect of the consequences of present structures, to affect future structure for the purpose of securing future outcomes that are beneficial. Moreover, empirical research supports the functionalist theory that organizational structures change because of the feedback from organizational
performance (Donaldson 1987; Ezzamel and Hilton 1980), as a result of managerial perceptions about such problems (Hill and Pickering 1986).

Going further, an entrepreneur may bring into being an organization that he or she intends will produce some beneficial function (e.g. serving a new market). In this way human intention can provide a functionalist explanation for the origins of a new organization. Similarly, human intention to increase the functionality can provide a functionalist explanation of how new organizational structures originate, e.g. the invention of the multidivisional structure by the managers at DuPont (Chandler 1962). Thus, through human intention, functionalism can explain not only the persistence of, and change in, existing structures, but also their origins.

Where organizational outcomes are severely dysfunctional, then that organization may fail to survive, so that the remaining organizations in the population are more functional (Hannan and Freeman 1989). In this Darwinian way, more, rather than less, functional organizational structures (or forms) can persist without any managerial intention or other human purpose being entailed.

Thus there is nothing philosophically or logically invalid about functionalist explanations of organizations. Moreover, by pursuing the functionalist theoretical agenda, through showing empirically the performance consequences of structures and their feedback effects (Donaldson 1987; Ezzamel and Hilton 1980; Hill and Pickering 1986; Hamilton and Shergill 1992, 1993), organizational theory research is providing the kind of evidence that skeptical critics of functionalism demand (Elster 1983: 61).

In formal terms functionalism involves the following logical structure: (p. 54)

\[ x \text{ causes } f \]

Where \( x \) is some attribute of an organization or one of its individual members and \( f \) is a function, that is, an outcome of \( x \), which is of value to the organization, member or society.

\[ \text{and } f \text{ causes } x \]

Where the functional outcome, \( f \), feeds back to cause \( x \) (or the organization itself) to exist, or \( x \) to be increased so as to increase \( f \), or the organization to not survive because of a low value \( f \). Or where the human intention of attaining \( f \) causes \( x \) (or the organization itself) to exist, or \( x \) to be increased so as to increase \( f \).

This formal statement includes both causality by feedback and by intention about the future. Human intentions about the future are, of course, not always borne out in the
future. What actually occurs is also influenced by many factors other than intention, such as knowledge, judgment, capability, and luck. Insofar as human intentions are shaping the organization, they will explain the organization in a functionalist way only to the extent that the intentions about producing functions are realized in practice in the future. Otherwise the explanation is one by human intention shaping the organization but not in a way that is functionalist.

1.4.3 No Problematic Ontological Assumptions

In referring to external situational causes, such as ‘the size of the population in a state of the United States’, no claim is being made that such a factor necessarily exists. In philosophical terms, there is no ontological claim being made. Nor is there a presumption about ontology being made that is some kind of presupposition upon which the validity of positivist theory stands or falls. The external situational causes used in positivist theories are constructs, like those in any theory. As constructs, these causes are concepts used in the explanation. They may or may not exist. The question of their ontology is distinguishable from the question of their validity as explanations, which hangs on their ability to coherently account for patterns in the empirical data.

Within epistemology, the nominalist or instrumentalist account of science holds that scientific concepts are adequate if they meet tests of coherency and the explanation of data, without having also to pass tests of ontology (such as can the concept be seen, touched, etc.) (Chalmers 1999). The contrary epistemology of realism holds that theoretical concepts corresponds to entities that exist in the real world, so that the causes posited by positivist theories would be required to exist and entail ontology. Thus, on philosophical grounds, there is room for a range of views about how far the external situational causes of positivism exist or not. The key point is that the nominalist or instrumentalist epistemology allows positivism to speak about external situational causes without thereby having also to hold that such causes exist. Therefore there is no obligation on positivist research to show that such external situational causes pass tests of existence (i.e. ontology). Instead, the explanations by reference to external situational causes proffered by positivism are to be subject to tests of their validity as explanations, the same as any theory, i.e. tests of logical coherency and consistency with data.

1.4.4 Strong Hermeneutics Not Required

As we have seen, positivist social science is sometimes mistakenly equated with behaviorism, that is, studying observable human behavior and ignoring that people have a private inner world of consciousness. Yet almost all of what is interesting about
organizations and organizational behavior involves action, that is, the behavior and the meanings that people give to their behaviors and those of other people. Meaning involves language and consciousness. They are what define a piece of behavior as ‘making a decision’, or ‘exercising authority’. Thus even if studying organizational structural phenomena such as centralization of decision-making, the analyst is studying meaningful action involving the subjective meanings held by the organizational members. Mutually shared meanings between actors produce the interactions between roles that constitute organizational structures such as a hierarchy of authority. More importantly, the shared meanings of people interacting together create ‘the organization’. In this sense organizational studies, like almost all social science, is weakly hermeneutic (i.e. entails the interpretations of the social actors). For example, to say of an organization that its size is a thousand members is only valid if those people see themselves as members of that organization. However, as Phillips (1992) states, social research can be hermeneutic in the definition of its variables without requiring that the relationships it studies between those variables be purely hermeneutic, i.e. be the interpretations given by the actors who are being studied. An external analyst can take these same variables and come up with different relationships among them and interpret them by a theory that is different from the theory that is believed by the actors. In Phillips's (1992) terms, social research is weakly hermeneutic, but does not all have to be strongly hermeneutic. In particular, positivist organizational science is weakly, but not strongly, hermeneutic. The phenomena and variables of organizational science entail subjective meanings, and in that sense are weakly hermeneutic. However, the relationships among the variables are explained by positivist theories constructed by an external analyst and can be different from the interpretations of the organizational members, i.e. not be strongly hermeneutic.

1.5 The Future of Positivist Organizational Science

Continuing with positivism can make further progress in organizational science in the future. As we have seen, positivism can explain organizational change as bringing into alignment the organizational structure with the situational contingencies, so that adaptation occurs. However, this adaptive process is subject to time lags, which might seem to indicate limitations in the scope of the positivist explanation of organizational change. Yet, positivism can be extended to offer an explanation of when adaptive organizational changes will occur.

The adaptation of the organization to its environment allows it to perform more highly. However, the adaptive process is itself driven by organizational performance in a positivist way, in that the level of performance feeds back to foster or postpone adaptive
organizational change. An organization in misfit with its environment or situation consequently suffers lower performance (Hamilton and Shergill 1992, 1993; Keller 1994). However, it is only when performance drops to the point of being low that adaptation is triggered (Child 1972; Donaldson 1987; Ezzamel and Hilton 1980; Hill and Pickering 1986). This is consistent with the theory that managerial decision-making under ambiguity is boundedly rational, i.e. problem-solving that is triggered when outcomes have become unacceptable (Simon 1997). The ensuing crisis of low performance impels adaptive organizational change. Organizational performance is the result of the fits or misfits (e.g. in organizational structure) between the organization and its situation, together with other causes of organizational performance (Child 1972). Such other causes of organizational performance include the business cycle, competition, directors, and divestment (Donaldson 1999). The interaction of these other causes of organizational performance with misfit determines whether organizational performance drops low enough for adaptation to occur, or not (Donaldson 1999).

Use maybe made of portfolio theory from finance (Sharpe 1970), to construct, by analogy, an organizational portfolio theory (Donaldson 1999). Each cause of performance is a factor in the organizational portfolio. Each organizational portfolio factor has a certain variance and a certain covariance with misfit. Those factors with high variance that are positively correlated with fit, so that they depress organizational performance when the organization is in misfit, drive down organizational performance and so promote organizational adaptation. In contrast, those factors that are negatively correlated with fit, so that they buoy up organizational performance when the organization is in misfit, tend to maintain satisfactory organizational performance and so postpone organizational adaptation. Thus the key to facilitating needed organizational changes lies not so much in the minds of managers (where it is usually sought), but in the objective situation they face and which forces them to act: the performance level of their organization. This, of course, is consistent with the positivist theory that causation lies in the external situational conditions, rather than in the minds of organizational members, and that situational imperatives determine the organization, rather than that individuals exercise a free choice. Organizational portfolio theory provides an analytical framework for modeling performance-driven organizational change at both the organizational and divisional levels (Donaldson 1999). Thus positivism can further the explanation of organizational change by studying it through the lens of organizational portfolio theory. In this way, organizational positivism may illuminate not only long-term causal relationships that align the environment, contingencies, and structure, but also the short-run dynamics that explain when change will, and will not, occur. It is a task for future research to empirically test organizational portfolio theory and ascertain its validity more comprehensively than has occurred to date.
To the degree that organizational portfolio theory is corroborated in future research, it may shed light beyond that presently available from traditional, non-positivist analyses of organizational change. It could eventually help take practice beyond the more customary, ideationalist approach, of trying to change organizations by seeking ‘to change managerial thinking’. Instead, positivism holds that adaptive organizational change is fostered by altering organizations so that, periodically, they have episodes of low performance when they are in misfit. This state is attained by altering the organizational portfolio factors that affect how the organization is impacted by its environment and so affect its performance levels (Donaldson 1999). It is also partly attained by altering the external environment of the organizations, such as by government policies on competition and taxation, which affect organizational performance, either directly or through the organizational portfolio factors (Donaldson 2000). This is consistent with the positivist approach that organizational change is caused by the objective, situational conditions, so that fostering change entails changing those conditions.

References

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