
The philosophy of action science

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Abstract

Describes how there are unsolved problems within the philosophy of the social sciences, which cannot provide a coherent account of a style of science which is based on either explanation or understanding. No easy combination of elements from the empiricist and hermeneutic approaches is possible because of radically different epistemologies. Shows how, against this background of philosophical insecurity, action science seems to offer new possibilities by incorporating a form of practice of research which is aimed at understanding meaning, while at the same time retaining enough of the characteristics of the ideal of scientific reliability (hard data, explicit inference, public testing) to free it from the danger of uncritically adopting the internal viewpoint of participants. It is free from commitment to empiricist epistemological principles, so that it can combine elements of the explanatory and interpretative poles in a coherent way. Argues that it is a valuable contribution which can advance the discussion within the philosophy of the social sciences.

Action science is becoming increasingly recognized as a method for doing research in organizations. There is a growing body of literature presenting the features and advantages of action science and comparing it with more established approaches in the study of organizations. This literature addresses issues of scientific method and explanation with a new freshness, perhaps because the issues arise from the practice of the science removed from academic discussion. Perhaps the clarification of issues in action science might be a valuable contribution to the broader philosophical discussion of problems in the social sciences? Does this approach open up new possibilities for the social sciences in general? I want to answer “yes” to both questions. I will first outline the contemporary situation in the philosophy of the social sciences, then I will consider the distinctive approach of action science and its related disciplines and locate their approach in a spectrum of methods, and finally I will indicate the value of adopting and elaborating the approach of action science beyond the narrow field of organizational research.

The philosophy of the social sciences

A useful summary of the present situation in the philosophy of the social sciences is Martin Hollis's book, *The Philosophy of Social Science: An Introduction*[1]. From his review of study methodologies articulated in the discipline, Hollis outlines two major polarizations. One is the opposition between explanation and understanding, and the second is the tension between holism and individualism. The overlapping of these two polarizations results in a matrix with four positions: explanation, with the focus either on the social whole or on the individual, and understanding, with the same alternative pair of focuses.

Explanation or understanding

From their beginnings the modern social sciences have emulated the natural sciences, or more specifically physics, and have attempted to operate with comparable standards of evidence, inference and prediction. But from their beginnings also, the modern social sciences have faced objections from those who thought that the methods of physics, however appropriate to the material world, could not account for human meaning,

and that the interpretation of meaning would have a major part to play in the sciences of human action and organization. Where the first approach led to the empiricist tradition in the sciences, the second has generated the hermeneutic tradition. In Hollis's terms, the former seeks to explain human action and organization, while the latter seeks to understand these human realities. This polarization of terms is perhaps not so familiar in ordinary English usage, but it translates the German terms *Erklären* and *Verstehen*, which served to summarize the positions taken up in the German philosophical debate of the issue. In the contemporary English language discussion, the explanation pole relies on the covering-law model (deductive-nomological, or hypothetico-deductive) of science: to explain is to identify the relevant generalizations which cover the case to be explained. The researcher studying an organization either appeals to laws generated by previous research which are confirmed in the case under examination, or attempts to formulate new law-like statements on the basis of the data, which might then be confirmed or disconfirmed by further investigation. Explanation involves appeal to a law. At the other pole, social scientists in the hermeneutic tradition attempt to understand social reality by interpreting the meanings shared by the social group or held by social actors. This approach is frequently illustrated by the example of the interpretation of texts. The work of drawing out the meaning of a text results in the understanding of the text as communicating a unique meaning, and while the text itself may be classified as belonging to a particular genre, legal code, novel, sonnet, love letter, or whatever, its meaning cannot be grasped by seeing it as an instance explained by a covering law. The researcher studying an organization has to enter into the culture of the organization, so that she can speak its language, share its vision, and so understand it as it reveals itself. It is a matter of discovering the meaning of actions and structures analogous to the meaning of a text.

Distinguish observer and participant

The polarization between the extremes of explanation and understanding can be seen in their respective views of the relative roles of observer and participant. The empiricist tradition privileges the perspective of the

distanced, detached observer, while the hermeneutic tradition privileges the stance of the engaged participant. In one sense, no one is ever merely an observer of social events, but always somehow also a participant. But in some respects it can be meaningful to consider the observer as independent of the events observed; the spectator in the stand at a football match has an overview of the whole game and can see what no individual player can see. It is possibly the ideal of experimentation under laboratory conditions in the natural sciences which lends weight to the idea that the distinctively scientific stance is that of the detached observer. The idealization expressed by the notion of laboratory conditions has been modified with the advance of physics: difficulties in conducting measurements in nuclear physics have drawn attention to the fact that the measurement process is inevitably an intrusion which affects the processes studied, so that the detached observer ideal is not an appropriate one which can now hold universally in the natural sciences themselves. But the ideal of the disinterested observer has a particular application to the human sciences, where participants in social events inevitably have interests which will colour their perception of social reality. The scientific account of events was seen to be one which is independent of the interests of those whose actions constitute the events. The articulation of this position required the distinction between fact and value, and the adoption of this distinction from the writings of philosophers into the human sciences resulted in the formulation of the aim of science as the generation of value-free conclusions. Value questions were seen to be appropriate to the participants, especially in matters of policy making by governments or other authoritative instances, while the scientific observers concerned themselves primarily with factual matters.

On the other hand, the hermeneutic tradition privileges the perspective of the engaged participant in seeking to generate adequate understandings of social reality. It is emphasized that social actors are not automata but people who know what they are doing, at least some of whom could give a sophisticated explanation of their activity in terms of values and purposes. To understand their activity therefore is to reproduce the meanings of the social actors themselves. The implication of this is that as meaning is intrinsic to social

events, so scientific understanding is either actually or potentially internal to what is being studied. The scientist reconstructs in his/her own achievement the constructions of the human spirit in the various realms of human activity, economic, political, artistic. The emphasis on the understanding of the participant as the key to science provokes the question of the possibility of understanding activities and systems in which one does not participate, and which are in that sense foreign. Can the other, the foreign, be known? The answer from the hermeneutic tradition is that only one who has appropriated the language and culture of a human social entity is in a position to understand its meaning, and so even a researcher who approaches a group from outside would be expected to adopt as much as possible the mind-set and attitudes of a participant if he/she is to understand the meanings which constitute the group's world. There could be no separation of value and fact, since only from the perspective of the shared evaluations of the group could the group's description of its world be understood. This approach is followed in ethnography.

Problems with this polarity

Because the explanation model has enjoyed a hegemony in the methodologies of the mainstream social sciences, there is already a significant body of literature documenting the limitations of the hypothetico-deductive approach. By contrast, only recently has the hermeneutical pole received an explicit articulation in its own right. As a result, most of the recent objections are to the explanation model, while it in turn relies on a rejection of the weaknesses of the understanding model.

Distinction observer/participant not workable

How do we distinguish between a participant and an observer in social affairs? The problem arises constantly in everyday life, especially as the commentary of analysts quickly becomes part of the self-understanding of participants. Commentators on current events frequently offer remarks which purport to be based on a detached analysis, but which lead to practical consequences when fed into the process. The detached observation quickly becomes an intervention. An example would be the

remarks by observers about the brinkmanship of negotiators in industrial disputes. Those engaged in the talks begin to understand themselves in the language of the commentators, and resolve "not to blink first". The comment distorts the process. The same tension arises in all reporting on situations of civil strife; supposedly factual comment and prognoses of what participants are likely to do next can be inflammatory. The comment is also an intervention, contributing ideas and expectations into the processes under observation. The observer is also a participant.

The self-understanding of the sciences disputed

Rory O'Donnell is an Irish economist who has worked in a number of bodies whose task is to advise government. He has recently published a paper in which he reflects on the usual theory advanced to explain the relationship between economists and the governments they advise [2]. The theory is that the economists simply present their analysis of some situation, and leave the policy making to the politicians. From his own experience of operating professionally in this role O'Donnell maintains that the interaction between policy makers and scientific advisers is not as simple as that suggested by the theory which distinguishes between the participants concerned with policy and value questions, and the analysts concerned with questions of fact. He calls for a more adequate reflection on this interaction.

Problems with explanation

Covering-law explanation aims at identifying regularities in the behaviour of particulars which allow of standardization and measurement. Associated with it is a version of empiricism, according to which only perception and the testing of prediction can justify claims to knowledge of the world. It relies on the distinction between judgements of value and judgements of fact, and this itself is questionable. However, judgements of fact are not as unproblematic as many empiricists originally thought. The handling of facts in order to explain them was taken to require a double layer of language: one language to describe the data which are to be explained, and another language to formulate the relations of ideas which make up the theory. This distinction of

languages is now recognized as naïve: it is accepted that it is impossible to identify and describe data without relying on a language which is already theory laden, so that the ideal of pure data is illusory. The data to be explained are also in a sense human constructs, just as the theoretical constructs used to explain them.

Explanation and prediction

Another difficulty with the nomological-deductive approach to explanation is the alleged symmetry of explanation and prediction. In the covering-law model, success in prediction of future events is the test of the adequacy of explanation of past events. However, since no experiment in the social sciences can be conducted in laboratory conditions, since human events cannot be repeated, and the attempt to do so would itself constitute a change in the nature of the situation under investigation, prediction will always be a stab in the dark. Even if the predicted event occurs, this cannot in itself qualify as validation of the explanation, since such validation would have to rely on the correspondence of the conditions with those presupposed by the covering law, and there is no checking or controlling the conditions without changing them.

Poor predictive success

One of MacIntyre's criticisms of the claims of the covering law model of explanation is that candidates for laws in social sciences rarely if ever include a precise description of the conditions in which the law would hold[3]. MacIntyre has challenged the notion that human affairs could be explained in terms of law-like generalizations which would allow for predictability. Part of his challenge is to examine the achievement of the sciences in terms of prediction, and he concludes that the social sciences have been unsuccessful as predictors. Another writer who challenges the claims specifically of economics to predictive success is Etzioni[4]. But as well as failing in generating useful laws, the social sciences seem to be able to live comfortably with the fact that there are many evident counter-examples to the generalizations which they do produce. The counter-examples are not taken as falsifying the asserted laws. Redman substantiates this impression that laws in the social sciences

tend to co-exist comfortably with counter examples, so that the methodology of "falsification" does not in fact operate despite the assertion of many economists to abide by Popper's philosophy[5]. MacIntyre concludes that laws cannot be as the dominant philosophy of social science would take them to be, namely, generalizations which allow for predictive success. Nor is he surprised at the lack of predictive success, because he maintains that there are several sources of systematic unpredictability in human affairs. Among these he points to the possibility and inherent unpredictability of radical conceptual innovation, the impossibility of prediction where choices have yet to be made, the elements in social life whereby expectations are reciprocal, the flow of information is restricted or distorted, and the multiplicity of interacting levels so that the sphere of the political cannot be kept discrete. Finally there is the factor of pure contingency.

The element of unpredictability in social life allows MacIntyre to suggest that Machiavelli may have had the right approach to social science when he suggested that Lady Fortune had control of almost half of human affairs[6]. This would make sense of the situation whereby the law-like generalizations produced by social science could live comfortably alongside the counter-examples which elude the laws.

Of course there are elements of predictability in social affairs. There is a widespread shared knowledge of what we can expect from others and what we can expect them to expect from us, there are statistical regularities without causal connections, and there are the causal regularities both of nature and social life. These do allow for some reliability in planning of our lives. However, it would be impossible to eliminate the unpredictable, and a form of madness to attempt to do so.

Problems with the hermeneutical approach

The interpretation of meaning is not without its problems: since it involves entering into the mind-set of the individual or group under discussion, how can the researcher maintain the critical distance required for a valid interpretation? Whose meanings are to be taken as significant in understanding social reality? How can the researcher be sure that his/her understanding in fact conforms to the mean-

ings studied? What standards are to operate in distinguishing between scientifically valid and invalid interpretations?

Concern with these and related questions has led some thinkers to elaborate on the elements of self-criticism which would have to be present in the operations of anyone attempting to reconstruct the meanings of others[cf. 7]. More generally, the expansion of critical method to discourse about goals, values and political commitment has been the agenda of those like Jürgen Habermas who have based their philosophy on the model of unrestricted dialogue free from coercion and manipulation[8].

The agenda for the social sciences

Hollis argues that the limitations of the positions at any of the poles of his two disjunctions would make it unwise to simply opt for the methodology of any one of them. However, it is not clear how one might move across boundaries and include the perspectives of other positions without resulting in contradiction, e.g. on the fact-value distinction, both separating fact and value, and combining them. How might one move from the pole of the detached observer towards the stance of the engaged participant without giving up the claim to scientific objectivity, based on recognizable standards? These are genuine difficulties in the social sciences today, and there is as yet no satisfactory resolution in sight. Outhwaite's book *New Philosophies of Social Science* with its survey and comparison of realism, hermeneutics and critical theory corroborates this impression that the question of method in the social sciences is still unresolved[9]. I now turn to examine suggestions coming from action science to see if they offer any prospect of progress.

Action science

If the polarization of theoretical and practical, of observer and participant, is part of the problem of contemporary social science, is there any approach which frees the philosopher from this dichotomy? Some work coming from the disciplines of behavioural science and organization development is of value here. I refer in particular to the ideas of action science promoted by Argyris[10], of the reflective practitioner advocated by Schon[11,12], and of organizational culture

presented by Edgar Schein[13]. These seem to offer a kind of approach to studying social reality without separating (while distinguishing) fact from value; they require a practitioner of the science who not only is an engaged participant, but also incorporates the perspective of the critical and analytical observer, not as a validating instance but as integral to the practice; and they envisage social entities and organizations which themselves allow for reflection on theories in use and devote themselves to effective learning and revision of inherited assumptions.

Argyris on action science

The polarity of participant and observer is abandoned in the stance taken by Argyris. The scientist who follows the canons of action science does indeed perform the function of observer, but as one who participates in the system he/she observes. His/her "observing" scientific activity is an intervention in the system; the intervention is oriented to the goal of promoting learning. However, unlike a purely observing science, this approach aims at generating learning within the client system itself. The aim is not only that the scientist should come to know more about the system studied, but that the people studied within the system should also learn more about what is going on. This latter is not an additional extra, a by-product of the science, or an implementation of something already discovered; rather, the learning within the client system is integral to the learning of the action scientist. This is because the systems studied are not assumed to be (either naturally or in fact) in a state of equilibrium; the request for the study, which in action science is expected to come from within the studied system, arises from the experience of some problem or breakdown or encountered obstacle to planned change. The determination of the problem to be studied is largely done by participants, and therefore a significant element of that problem description will have to be the goals and purposes of the participants and their institutions. The questions of value and of the practical justification of rules and goals cannot be excluded from the scope of the science.

Action scientists emphasize this point about the determination of the problem to be studied as marking a major difference between their approach and that of mainstream empirical social science. In the latter it

is the scientist who chooses what to study, and the goals driving the investigation are those of the scientist; the goals of the people studied may become part of the data, but have no impact on the learning process. According to Coghlan this represents a distinctive feature of action science as a clinical perspective in contrast with ethnography, which is also an instance of inquiry from the inside [14].

The setting of the research problem is not simply left to the client, however. The interventions of the action scientist are oriented to clarifying if the participants' own description of what goes on and identification of the problem including goals to be achieved are adequate. Frequently there will be learning in the client system about itself, its situation and its goals, in tandem with the researcher's learning about the system and the problem to be studied. Further intervention by the action scientist will guide the project towards generating knowledge which is usable in relation to the reconstructed goals and purposes of the participants within the system.

The proponents of action science are aware that their approach abandons the value-neutrality of mainstream social science. Since this mainstream stance is usually taken as essential to scientificity, action science has been at pains to insist on the scientific nature of its own endeavours. While some proponents highlight the differences between the two approaches, others draw attention to the similarities. No less than the mainstream approach, action science insists on the production of reliable and checkable data; as in established science, all inferences drawn on the basis of data and theory are to be explicit; related to the requirement that arguments be explicit is the demand that hypotheses be exposed to public testing; and as in empirical science the ambition is to generate systematic theory. But while insisting that it is a science, action science suggests that its clinical rather than laboratory approach is more appropriate to the nature of the object studied, namely, human social systems in process.

The reflective practitioner

The action scientist requires a definite set of skills. He/she may not intervene in the client system as the qualified expert who knows, in contrast to the client participants who lack the knowledge to solve their own problems. He/she needs the skills of being able to enter

imaginatively at least into the value system of the clients, in order to grasp their description of the situation and the setting of the problem from their perspective. At the same time, he/she must have the critical skills which will allow him/her to challenge the presenting descriptions and facilitate clarification of the operative goals and criteria. Those skills may not be oriented simply to the critique of the clients' knowledge; a reflective stance is also required so that he/she can be deliberate in his/her own interventions, allowing them to be exposed to public as well as self-criticism.

The learning organization

Edgar Schein's work on organizational culture seems very applicable to the problem of understanding what is going on in organizations with a view to encouraging learning. He defines culture as (a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think and feel in relation to those problems [13, p.12]. Schein focuses on the pattern of basic assumptions which guide the action of the group members, and which are taken as valid. Any change in the culture, whether through spontaneous evolution or through managed development, will have to involve learning by the members of the group. That learning will be at the level both of operative theory and of action. Schein also notes the blocks to such learning which exist: "we are all culturally overtrained not only to think in terms of certain consensually validated categories but also to withhold information that would in any way threaten the current social order" [15]. There has to be an unfreezing of inherited perspectives if practitioners in a group are to revise their operative assumptions and adopt new ways of thinking and acting. This would require intervention in the group and direct interaction with the members: mere change of policy or propagation of espoused theory will not effect what actually occurs on the shopfloor. The intervention is like what action science intends. The action scientist would help practitioners to detect the influence of culturally learned assumptions and categories of thought in their speaking and acting.

Applications

The usefulness of action science and related disciplines within their own immediate sphere of application will become clear from successful use with client organizations. My argument is that their approach is not only respectable in terms of the philosophy of the social sciences, but that they offer suggestions as to how difficulties encountered in the philosophy of the social sciences might be resolved. They have a contribution therefore which goes beyond their immediate field in organizational behaviour.

In much of the literature considering the credentials of action science and similar clinical approaches, the tendency is to go on the defence against expected challenges from exponents of the mainstream covering-law model of explanation in the social sciences. Furthermore, this strategy makes sense in the light of the hegemony of that explanatory model. So for instance, Susman and Evered contrast action research and positivist science, ask the question “Is action research scientific?”, and explore philosophical approaches which would add legitimacy to the scientific claims of action research [16]. Aguinis, writing more recently, is less defensive and compares action science to scientific method with a view to identifying similarities in approach rather than differences. He is therefore more optimistic about the possibilities of action science holding its own as a research methodology [17]. In both cases, however, the focus is on the adequacy or inadequacy of action science, measured against mainstream covering-law explanation as the standard.

My argument is from another direction. From within the philosophy of the social sciences I have identified problems which remain unresolved. It seems impossible to provide a coherent philosophical account of a style of science which is located at one or other of the poles of explanation or understanding. At the same time, no easy combination of elements from the empiricist and hermeneutic approaches is possible because of the radically different epistemological principles behind each of the poles. There is therefore a problem for the philosophy of social science. On the other hand, recent developments from within the hermeneutic tradition have explored the potential of the idea of dialogue and coercion-free communication in elaborating a way of doing research

which would allow values and political commitments to be subjected to critical review as well as claims to knowledge. However, these developments have only been exploratory and have not as yet led to the elaboration of scientific methodologies. Against this background of philosophical insecurity and tentative explorations, action science seems to me to offer new possibilities for the philosophy of social science as well as for research into social reality. It incorporates a form of practice of research which is aimed at understanding meaning, while at the same time retains enough of the characteristics of the ideal of scientific reliability (hard data, explicit inference, public testing) to free it from the danger of uncritically adopting the internal viewpoint of participants. At the same time, action science is free from commitment to empiricist epistemological principles, so that in its account of what it is doing, namely, producing usable valid knowledge for client systems, it can combine elements of the explanatory and interpretative poles in a coherent way. This is a valuable contribution which can advance the discussion within the philosophy of the social sciences. The contribution can also be seen as a concrete articulation of the programme for the human sciences which has been developed largely within German discussions. Philosophical treatment by Jürgen Habermas, in debate with K.O. Apel, the Frankfurt School and others, has opened up a vista of human sciences freed from the poles of positivism and Marxist commitment to a particular value system, and capable of subjecting issues of value and political commitment to critical review as much as claims to knowledge. The philosophical hints require translation into methodologies for practising researchers. Action science seems to me to offer one such articulation which would allow a new way of doing science. For these reasons I am suggesting that action science as an articulated methodology has significance beyond the field of research into organizations.

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