The Debate about Quantitative and Qualitative Research: A Question of Method or Epistemology?
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The debate about quantitative and qualitative research: a question of method or epistemology?

ABSTRACT

The main dimensions of the debate about the relative characteristics and merits of quantitative and qualitative methodology are out-lined, emphasizing the philosophical issues which underpin much of the discussion. A distinction is drawn between epistemological and technical issues in relation to the controversy. Three areas are then selected which demonstrate a tendency for the debate to oscillate between epistemological and technical modes of ex-pression. The question is raised as to whether it is possible to establish a clear symmetry between epistemological positions (e.g. phenomenology, positivism) and associated techniques of social research (e.g. participant observation, social survey). The conclusion is sceptical about the extent to which a neat corre-spondence can currently be established.

Over the past fifteen years, the debate over the relative virtues of quantitative and qualitative methodology has gained considerable impetus. While the exact constitution of the two methodologies varies somewhat from author to author or is defined with varying degrees of specificity, there is substantial agreement about the fundamental antinomies and their practical implications for the conduct of research. One of the difficulties, however, in representing the divergencies between the two methodologies, derives from a tendency for philosophical issues and technical issues to be treated simultaneously and occasionally to be confused. Philosophical issues relate to questions of epistemology, i.e. the appropriate foundation for the study of society and its manifestations. By contrast, technical issues bespeak the consideration of the superiority or appropriateness of methods of research in relation to one another. Much of the recent methodological literature sees the latter as deriving from the

former, i.e. the choice of a particular epistemological base leads to a preference for a particular method on the grounds of its greater appropriateness given the preceding philosophical deliberations. As we shall see, the two forms of argument occasionally become confused with each other, and this is particularly so when writers have sought to articulate the relationships between the two methodologies. In addressing these issues the term 'methodology' whether described as quantitative or qualitative, will refer to an epistemological position; 'method' and 'technique' will be used synonymously to refer to ways of gathering data. As such, 'method' and 'methodology' indicate different levels of analysis, and since the two terms are often used interchangeably[1] it is of considerable importance to distinguish the relevant realms of discourse.

In the 1950s and 1960s it was not uncommon to find discussions of the relative advantages and disadvantages of social surveys and participation observation.[2] A solution to many of the discussions seemed to lie in Trow's apparently sound advice that 'the problem under investigation properly dictates the methods of investigation'.[3] This is a highly seductive solution in that it would appear that whoever argues against it is likely to be implying the absolute superiority of one particular technique, a position that requires a good deal of confidence in one's choice. In more recent years, the nature of the debate seems to have changed somewhat in that discussions centre upon comparisons of quantitative and qualitative methods or methodologies. A prominent feature has been the emergence of textbooks dealing almost exclusively with qualitative methods,[4] along with journals which focus exclusively on data drawn from these methods (notably *Qualitative Sociology*, *Urban Life* and *Anthropology and Education Quarterly*), as well as special issues of journals with a more general readership devoted to discussions of qualitative methods.[5] In large part, these expositions comprise a contrast between the two forms of methodology by writers who either are themselves users of qualitative methodology or are rather sympathetic to it. Quantitative methodologists seem rarely to write about the nature of their research activity in contrast to plausible alternatives. Much of our current understanding about the fundamentals of quantitative methodology and its epistemological distinctness from qualitative methodology derives from writers within the latter tradition. This is not to suggest that the depiction of quantitative methodology is necessarily inaccurate; indeed many of the expositions reveal a very clear understanding of (albeit a lack of sympathy with) its essential characteristics. The distinction between quantitative and qualitative methodology has been elaborated not only in sociology, but also in related fields such as evaluation research,[6] educational research[7] and organizational analysis.[8]

In some cases writers have chosen not to use the quantitative/ qualitative distinction and have instead used terms which have been used as synonyms. The terms 'positivist' and 'empiricist' often denote the same fundamental approach as 'quantitative', while 'naturalistic' field research, 'ethnographic', 'interpretivist', and 'constructivist' are sometimes used instead of 'qualitative'.[9] Whatever the nomenclature, what is increasingly apparent in the literature dealing with research methodology is a tendency to talk about the distinctiveness of (and occasionally compatibility between) quantitative and qualitative methodologies as against particular techniques. Whether surveys are 'better' than participant observation seems to have become a question that is rarely addressed. Whether this is a significant shift in emphasis and some of its consequences are the foci of this paper.

QUANTITATIVE AND QUALITATIVE METHODOLOGY AS RESEARCH TRADITIONS

Quantitative methodology is routinely depicted as an approach to the conduct of social research which applies a natural science, and in particular a positivist, approach to social phenomena. The paraphernalia of positivism are characterized typically in the methodological literature as exhibiting a preoccupation with operational definitions, objectivity, replicability, causality, and the like.[10] The social survey is typically seen as the preferred instrument of research within this tradition because it can apparently be readily adapted to such concerns. Through questionnaire items concepts can be operationalized; objectivity is maintained by the distance between observer and observed along with the possibility of external checks upon one's questionnaire; replication can be carried out by employing the same research instrument in another context; and the problem of causality has been eased by the emergence of path analysis and related regression techniques to which surveys are well suited. Research of this kind is frequently described as being positivist or empiricist. In attributing to it labels of this kind an essentially epistemological point is being made, namely that research of this genre is underpinned by a distinctive theory of what should pass as warrantable knowledge. Surveys are seen as instruments for the elucidation of research which makes such epistemological assumptions, though experimental designs and secondary analyses of pre-collected data are also often recognized as exhibiting the same underlying philosophical premises.

Qualitative methodology differs in a number of ways. The *sine qua non* is a commitment to seeing the social world from the point of view of the actor, a theme which is rarely omitted from methodological

writings within this tradition. Clear statements of this emphasis can be discerned in a broad range of writings.[11] Because of the commitment to see through the eyes of one's subjects close involvement is advocated. There is a simultaneous expression of preference for a contextual understanding so that behaviour is to be understood in the context of meaning systems employed by a particular group or society.[12] Qualitative research is deemed to be much more fluid and flexible than quantitative research in that it emphasizes discovering novel or unanticipated findings and the possibility of altering research plans in response to such serendipitous occurrences.[13] This is contrasted sharply with the quantitative methodologist's research design with its emphasis upon fixed measurements, hypothesis (or hunch) testing, and a much less protracted form of fieldwork involvement. The philosophical underpinnings of qualitative methodology are typically attributed to phenomenology,[14] *Verstehen*[15] and symbolic interactionism.[16] Many of these writers view the phenomenological theme as the most fundamental one, symbolic interactionism and *Verstehen* being prominent examples of its basic premises. The contrast with what is variously called positivism and a natural science approach is ever present among these writers. The point about the phenomenological position is that it takes the actor's perspective as the empirical point of departure. Positivist approaches are taken to exhibit a tendency for the researcher to view events from the outside and from the point of view of a cluster of empirical concerns which are imposed upon social reality with little reference to the meaning of the observations to the subject of investigation. While the possibilities of phenomenologically-based research tradition are occasionally questioned,[17] influential writers like Schutz clearly left open the possibility of such a perspective by claiming that it may be necessary to 'abandon the strictly phenomenological method'[18] in order to carry out the study of the social world. His contrast between a natural science approach which sees people as inert and a phenomenological approach which seeks to focus upon the lived experience of people[19] provides a key-note of this tradition.

In order to proceed with research into the social world which is informed by epistemological principles of this kind, research methods are necessary which facilitate an inside view. Unstructured interviewing and life histories (the latter to a lesser extent) are frequently mentioned as providing appropriate vehicles, but above all participant observation is the most favoured technique. 'Participant observation' is a rather broad term, in that not only does it encapsulate a wide range of observational practices, it is also used to denote a fieldwork strategy which includes general interviewing, usually of a relatively unstructured kind, the perusal of documents, and the interviewing of key informants. But it is the ability of the participant observer to get close to his subjects and so see the world from their perspective

that is its chief attraction. In so doing qualitative researchers produce data which they often call 'rich'[20] by which is meant data with a great deal of depth. Survey data are typically seen as deficient in this respect for they provide superficial evidence on the social world, winkling out the causal relationships between arbitrarily chosen variables which have little or no meaning to those individuals whose social worlds they are meant to represent. Blumer's[21] critique of 'variable analysis' still stands as one of the most incisive attacks on such research, and is widely accepted within the qualitative tradition.

What is clear from the various discussions about these two methodologies is that they are being explicated at an epistemological level and an attempt is then made to establish a link between it and a technical level, i.e. the practice of social research. The epistemological nature of the discussion is occasionally reinforced by recourse to the term 'paradigm' — usually in a Kuhnian sense — to denote the two traditions.[22] In so far as paradigms are meant to be incommensurable, then it is even clearer that two divergent epistemological bases are being expounded. In the context of this kind of discussion the question of techniques of investigation is no longer whether A is 'better' than B, but is A the appropriate technique in terms of a particular set of epistemological premises X? Proponents of qualitative methodology justify their preference for participant observation by reference to its ability to meet a prior set of epistemological requirements, which have been summarised briefly above. The social survey is seen as relevant to a different intellectual tradition, i.e. one informed by the preoccupations of a natural science approach. As Johnson has argued, the revival of interest in participant observation and field research 'is related to the abstract intellectual debates in a very fundamental way'.[23] This implies that the surge of interest in phenomenological ideas, along with a resurgence of interest in symbolic interactionism, led to an increase in participant observation and associated research techniques. It may also be the case that for some social scientists, a disillusionment with the spread of quantification in research led to a flirtation with methods which had often been seen as impressionistic, or unscientific, and the spread of phenomenological writing provided a ready-made justification for their research.

The apparent linking of more abstract philosophical issues with questions of research practice appears a more sophisticated way of treating the comparability of different methods of investigation than a direct juxtaposition in terms of relative superiority. It is also apparent that the notion of the 'appropriateness' of a particular method is different. In Trow's widely quoted observation (see above) it is the problem that determines the technique to be employed. It is not precisely clear what this means, but the notion of a problem

does not seem to include the more philosophical deliberations which have been in operation in recent years. In this latter milieu it is not so much a problem that determines the use of a particular technique but a prior intellectual commitment to a philosophical position. The problem is then presumably formulated within the context of these commitments. This suggestion also makes some sense in terms of the individual biographies of many social researchers, most of whom do seem to be wedded to a particular research technique or tradition. Few researchers traverse the epistemological hiatus which opens up between the research traditions.

One peculiarity of the various writings which have spawned these debates is the fact that it is the terms 'quantitative' and 'qualitative' which are used as symbols or reference points for the intellectual undercurrents. Yet the question of the presence or absence of quantitative data is but a superficial manifestation of the underlying epistemological issues. Indeed, neither directly signifies the clusters of commitments for which they are presumed to stand. There are few hard-nosed positivists who would deny the validity of at least some qualitative material; while many participant observers employ a modicum of quantitative evidence in their research, albeit of a rudimentary kind, or alternatively use a variety of 'quasi-statistical' terms, as Gans[24] calls them. While such considerations of degree of quantification should not be forgotten, it is slightly puzzling that it is this particular dimension of the debate that is taken as the terminological focus.

TECHNIQUE AND EPISTEMOLOGY

It has been observed above that the quantitative/qualitative distinction has become one which in large part derives from epistemological issues and that questions of research technique are taken to be systematically related to these issues. This seems to be a quite different form of argument from that which takes place when writers distinguish between methods or techniques. Trow's dictum that problems determine methods is essentially a reference to a technical rather than an epistemological issue. It suggests not only that one technique can never be inherently superior to its supposed alternatives, but also that a technique is likely to be more useful in some contexts than others. Others, like Zelditch[25] have sought to systematize such considerations by delineating the linkages between objects and techniques. An example of the object-technique nexus can be discerned in the suggestion by Warwick and Lininger that:

The sample survey is an appropriate and useful means of gathering information under three conditions; when the goals of the research

call for quantitative data, when the information sought is reason-
ably specific and familiar to the respondents, and when the
researcher himself has considerable prior knowledge of particular
problems and the range of responses likely to emerge. All of
these conditions are met in the areas of research that have been
the traditional strongholds of the survey -- public opinion, voting,
attitudes and beliefs, and economic behaviour.

Participant observation is usually more appropriate when the
study requires an examination of complex social relationships
or intricate patterns of interaction; . . . when the investigator
desires first-hand behavioural information on certain social
processes, such as leadership and influence in a small group; when
a major goal of the study is to construct a qualitative contextual
picture of a certain situation or flow of events; and when it is
necessary to infer latent value patterns or belief systems from
such behaviour as ceremonial postures, gestures, dances, facial
expressions or subtle inflections of the voice.[26]

Such arguments are 'technical' in that they simply seek to demarcate
those substantive issues or domains in which particular methods of
investigation are appropriate or inappropriate. There is a myriad of
technical reasons why participant observation is preferable to social
surveys in such a sense or vice versa. The final lines of Gans' classic
study of the Levittowners tell the reader that 'The mail questionnaires
and interviews provided more systematically collected data and are
thus more scientific in one sense, although less so in another, for
they can only report what people say they do and feel, and not what
a researcher has seen them say, do and feel'.[27] In other words, the
gap between word and deed may give participant observation a
technical edge over a survey, particularly when the possibility of a
disjuncture may be problematic. In another classic participant
observer study, Whyte[28] notes that a questionnaire to delineate
the distribution of the attitudes of racketeers is not a feasible under-
taking. Considerations of these kinds are bound up with researchers'
judgments about technical viability and are quite distinct from
philosophical debates which argue for the superiority of a particular
epistemological bedrock from which considerations of method
then emerge.

The more recent mode of discussing methods of investigation in
terms of appropriate knowledge bases occasionally loses sight of its
position by vacillating between an epistemological level or mode of
discussion on the one hand and a technical one on the other. This
reveals itself in three main areas each of which forms the subject
of the subsequent sections.

(i) Technique and Sensitivity One of the arguments that is often

proferred in support of qualitative methodology is that its associated techniques are more sensitive to the complexities of social phenomena than quantitative methods which tend to ride roughshod over their enigmatic quality. The quest for directly observable quantitative indicators (and abstract causal relationships among them) which are imposed upon an unsuspecting social reality neither captures the underlying phenomena in their full complexity nor facilitates an understanding of their contextual significance. Prolonged and close involvement, however, provides empirical leverage upon such concerns. This form of reasoning reveals itself in two comparisons, both drawn from an educational context, between research conducted in each of the traditions articulated in this paper. Light,[29] at the end of an article highly supportive of the qualitative agenda, attacks the Coleman report[30] which found that the schools children attend are poor predictors of achievement. The research was a piece of standard quantitative research which attempted to sift out relevant causal variables which were expressed as operational definitions of an underlying conceptual base. Light contrasts this study with

> a recent study from England[31] . . . systematically observed students in schools and came to very different conclusions. With richer, more holistic data it found that schools made an enormous difference in the proportion of students who passed national exams or got arrested for delinquency . . . While the investigators collected output data, they also went into the schools to find out what social processes lay behind the successes and failures of the contrast. In contrast to the wastefully expensive Coleman Report, which tried to analyse a training programme by isolating a few variables from the whole, the British study examined the whole and discovered key dimensions of educational programs that only systematic observation over time could discover.[32]

The second example derives from a monograph written by Patton[33] which forms part of a series produced by the North Dakota Study Group on Evaluation whose work has been described by Mishler as 'particularly useful since, in addition to outlining some of the crucial philosophical and methodological differences between the positivist and phenomenological approaches, they also specify methods for doing phenomenological research'.[34] In the report in question, Patton outlines quantitative and qualitative methodology as opposing paradigms and their philosophical underpinnings. In a chapter which aims to explicate the characteristics of the two methodologies, he draws heavily on a study by Shapiro[35] which sought to evaluate the Follow Through programme in schools. Such projects aim to widen and open out the educational process to enhance the development of child-teacher and child environment interactions as well as among children. The complexity of the psychological processes within

children, and their pedagogical ramifications, are given considerable attention. In line with many other studies of educational innovation, when statistical comparisons on test scores were carried out between children undergoing the programme and those not, there were no discernible differences. Shapiro also carried out a more qualitative investigation based upon the observation of children in classrooms. These studies, by contrast, found 'the quality of relationship between teacher and children and among the children, the variety and interest of the curriculum, and the general atmosphere of the classroom were notably different'.[36] Patton argues that Shapiro's analysis demonstrates how 'quantitative methodological procedures determined the results'.[37] Similarly Light observed in his Coleman-Rutter comparison that the former's 'method determined what was measured'.[38]

In spite of the fact that both writers seem convinced that they understand well the implications of these comparisons, their implications are less clear in the context of the issues being addressed in this paper. Both writers have a point. One cannot help but be uneasy when studies emerge with discrepant results which seem to be attributable to the methods employed. Even more so when it is remembered that the practical issues and implications at stake in these examples are ones of great magnitude. But two problems remain. First, how is one to 'know' which is the 'correct' analysis? Both Light and Shapiro (and Patton) opt for the qualitative studies, presumably because the closer involvement of researchers in such studies yield 'richer', more complete data. But these are rather subjective rules of inference and it may be that there are occasions when the close involvement of the researcher obscures a different range or level of phenomena. Second, what does all this have to do with the clash between positivism and phenomenology which is of considerable interest to both Light and Patton? If it is true that educational innovations *do* make a difference and that qualitative research better equips the researcher for such inferences, then an important methodological point is being established at a technical rather than an epistemological level. All that is being said is that, as Patton seems to observe,[39] the research technique must fit the problem at hand. Why, then, all this talk of the divergent philosophical bases of the two methodologies? They are quite redundant to the question of the suitability of one technique as against another in terms of solving a research problem. If the research problem is one which directly emanates from a particular epistemological position then the question of the appropriateness of a research technique is significant, for the technique must properly reflect the epistemological framework in which the research is embedded. If the problem is one such as those mentioned here (e.g. does a particular educational innovation result in a number of anticipated

benefits?), then the issue of the epistemological status of techniques would seem to serve little purpose. Indeed, it should be noted that the preference for the qualitative study in both of the cases cited above seem to be based upon technical rather than epistemological criteria. Other examples of discussions of this kind exist in the methodological literature in the social sciences. In terms of the questions being addressed here, they serve as an example of a tendency for epistemological and technical issues to become confused.

(ii) Qualitative Research as Preparation   This next theme is a long-standing one in the literature on research methodology. Its fundamental point is that because of the unstructured nature of most qualitative research with its associated lack of specified hypotheses, except in a very loose sense, qualitative research is inherently exploratory. As a result of this emphasis, the qualitative researcher embarks on a voyage of discovery rather than one of verification, so that his or her research is likely to stimulate new leads and avenues of research that the quantitative researcher is unlikely to hit upon, but which may be used as a basis for further research. Such research will follow up the leads suggested by qualitative research and will seek to confirm or reject them using the more rigorous framework associated with a natural science approach, i.e. quantitative methodology.

A concordat of this kind between the two methodologies is clearly attractive to those engaged in quantitative research. It provides them with a continuous supply of leads, hunches, or hypotheses which they can confirm, reject, or qualify, while simultaneously retaining their methodological ascendancy over qualitative research. Since this position takes the view that evidence must pass a particular type of test prior to its acceptance, qualitative research merely provides fodder for quantitative researchers and so occupies a lower rung on the epistemological ladder. However, researchers in the qualitative mould often accept this position too. Gans in his study of the West End, refers to his research as a 'reconnaissance — an initial exploration of a community to provide an overview' and then points out that: 'Many of the hypotheses reported here can eventually be tested against the results of more systematic social science research'.[40] This view of qualitative research as a preparation for quantitative research is one which can be noted in a variety of contexts, though there are those who object too, albeit often on technical rather than epistemological grounds.[41]

Comments like those of Gans which view qualitative researchers as providers of ideas are ones which operate at a technical level, i.e. they are talking about relationships between research techniques and their associated data. One might anticipate, however, that the more recent writing on methodology which emphasises epistemological distinctions would be less likely to exhibit a preparedness to

accept a rather secondary role in the overall research process. Lofland in a book which seeks to distinguish the two methodologies and to delineate their epistemological underpinnings observes: 'Quantitative studies serve primarily to firm up and modify knowledge first gained in a fundamentally qualitative fashion'.[42] Similar observations can be found in Evered and Louis's specification of the philosophical positions of 'inquiry from the inside' and 'inquiry from the outside',[43] in the introduction by Shaffir *et al.* to their collection of reminiscences by qualitative researchers (though they do observe that such research is not always preliminary),[44] and in Faraday and Plummer's suggestions about the use of life histories in the exploration of sexual behaviour.[45]

The interesting feature about this perspective derives from the distinct impression that can be gleaned from the recent methodological literature that quantitative and qualitative methodology are epistemologically distinct. Researchers within a qualitative tradition have increasingly sought to present their work as an alternative *modus operandi* for the conduct of social research. The suggestion that qualitative research is something which is prior to more rigorous, hypothesis testing research seems to belie this point. This is so, first because by diminishing the epistemological differences between the two approaches it accepts by implication the notion of verification of unstructured research, thereby in part accepting the positivist framework in which quantitative methodology is deemed to be embedded. Second, in affirming a view of qualitative research as something likely to be in need of confirmation it belittles the significance of qualitative research *per se*, and is indicative of a lack of confidence in its associated account of a theory of knowledge for the social sciences. In these ways, evidence is found for a second area in which technical and epistemological issues drift out of alignment. While there may be technical reasons why social research might usefully be built upon a *modus operandi* in which qualitative research provides insights and hunches for empirical confirmation, the philosophical accounts of the two approaches seem to indicate very fundamental divergences in orientation between the two methodologies. The suggestion that one is or may be preparatory to the other places both within the same epistemological framework.

(iii) Combining Methods The third area in which technical and epistemological issues become confused is the suggestion that both quantitative and qualitative research are best thought of as complementary and should therefore be mixed in research of many kinds. This emphasis has coincided with the growing attention focused upon 'triangulation'[46] in social research. While this term is occasionally taken to refer to a broad approach in which are combined 'multiple observers, theoretical perspectives, and methodologies',[47]

it generally denotes a reference to a combination of research methods. The point about the advocacy of combined strategies is that it seems to exude good sense. Why should there not be attempts by researchers to capitalize upon the strengths of different techniques and combine them in overall research projects? Such a view seems to lack the methodological parochialism that is at risk when writers extol the virtues of a particular method, while directly or inferentially denigrating the alternatives.

The difficulty with this thesis, in the context of the present discussion, is that the argument for triangulated strategies is essentially a technical one. It implies that a better overall view of reality is achieved when, say, a social survey is linked to some unstructured questioning or participant observation. It also enables the researcher to check the possible eccentricities of a particular technique in order to discern whether any inherent bias is present. Thus Whyte[48] has expressed his irritation with the tendency for the two types of research to polarize and has expressed his preference for combining the two strategies, thereby enjoying the fruits of each. He demonstrates the utility of employing an integrated strategy by drawing upon his research into Peruvian villages in which both surveys and anthropological techniques were employed. Anomalous results which were derived from survey data were cross-checked against qualitative evidence, and out of this process it was possible to make a substantial theoretical advance. So Whyte asserts: 'My strategy calls for a weaving back and forth among methods through the various stages of research.'[49] Recommendations of this kind are based upon technical considerations, namely that a superior piece of research will emerge if techniques are combined. This contention may well be true, but the debates about quantitative methodology are, as has repeatedly been observed, epistemological in nature. In spite of this, many writers who address and often acknowledge the distinctiveness of the two methodologies in philosophical terms, make pleas for the mixing of the two.

Douglas, whose work is generally located outside the positivist stream and who is often accredited as one of those who has influenced the outlining of the philosophical bedrock of qualitative methodology[50] tells us that:

> Since all research methods have costs and benefits, and since they differ greatly in their particular costs and benefits, a researcher generally finds it best to use some combination or mixture of methods.[51]

Similar indications can be discerned in Agar's introductory book on ethnography,[52] Wilson in his exposition of the 'qualitative-phenomenological hypothesis',[53] Rist when explicating educational research paradigms,[54] and many others. Other researchers like Sieber and

Trend[55] point to the cumulative advantages that accrued to their research by combining both quantitative and qualitative methods, though the latter author is somewhat suspicious about the extent to which a neat, additive dovetailing is as easy as some writers make it sound. In slight contrast, Myers sought to develop a methodological strategy 'somewhere between ethnographic and conventional survey methods'.[56] James in the context of her reflections upon the ethnographic study of drug use, views such research as 'filling out the gaps' and 'putting meat on the bones' of quantitative analyses of these phenomena.[57] Finally, van Maanan in the preface to a special number of the *Administrative Science Quarterly* very succinctly outlines the epistemological issues at stake, but then asserts that 'qualitative and quantitative are not mutually exclusive'.[58]

Many of these authors explicate the philosophical assumptions upon which the two methodologies are supposed to be grounded, while others seem to take them as 'givens' in their discussions, and then move to a consideration of the possibility of mixing them in pieces of research. The difficulty is that at a technical level methods may be commensurable as Whyte and others have sought to show, but at an epistemological level quantitative and qualitative methodologies are written about as though their knowledge bases are quite incommensurable. Consider a statement such as:

> When we speak of 'quantitative' or 'qualitative' methodologies, we are, in the final analyses speaking of an interrelated set of assumptions about the social world which are philosophical, ideological, and epistemological. They encompass more than simply data gathering techniques.[59]

The recent methodological literature is replete with views such as this which make clear statements about issues which are more than technical ones. Yet, as with the two previous sections, one finds researchers oscillating between epistemological and technical modes of expression and levels of analysis. In pointing to the virtues of a triangulated strategy virtually all of the writers cited here, many of whom have done a great deal to reinforce the philosophical issues, move in the direction of a technical level. This is not surprising since positivism and phenomenology, to take the two major philosophical strands, are far apart in terms of what they view as the proper stance to be taken in relation to the social world, what is to pass as warrantable knowledge, and the way in which knowledge is accumulated. As such, the possibility of a reconciliation indeed seems remote. In the context of a particular study a researcher may perceive areas in which a useful contribution might be made by both quantitative and qualitative *methods*, but it cannot be derived from this that the epistemological issues signified by the debate between quantitative and qualitative methodologies are *ipso facto* reconciled.

It may be that at the technical level the quantitative/qualitative distinction is a rather artificial one. The arguments for triangulating research techniques suggest this in part. But even research which relies almost exclusively upon one mode rather than the other often contains elements of both. Survey researchers often punctuate their research reports with brief transcripts of the verbalizations of their respondents. While the use of these transcripts is often to illustrate a quantitatively established point and thereby relieve the reader from the tedium of a large number of tables, their use is often to give some sense of how respondents view a particular cluster of issues. Indeed, some survey researchers seem to exhibit a commitment to the epistemology of qualitative research, in particular its emphasis upon seeing through the respondents' eyes, yet use the technical paraphernalia of the survey.[60] In contrast, qualitative researchers frequently make quasi-quantitative assertions, such as 'many', 'frequently', or 'some of the time'.[61] While the establishment of such implicit frequencies is far removed from the rigorous statistical techniques often associated with quantitative methodology, they contribute to a blurring of the lines between the two styles. At the epistemological level, the distinction is less obviously artificial since the underlying tenets relate to fundamentally different views about the nature of the social sciences, which have resisted reconciliation for a very long time.[62] However, a great deal of research which is apparently either quantitative or qualitative in orientation is conducted with little, if any, recourse to such philosophical debates. At the technical level, researchers seek to achieve a degree of congruence between a research problem and a technique, or cluster of techniques, to answer the issue at hand. Consequently, while the quantitative/qualitative distinction may be a useful device for distinguishing types of technique as an organizing principle in the context of text-books about research methods, its use as an account of research practice is not without problems. The suggestion that participant observers are carrying out research which is outside the positivist mainstream often seems highly farfetched when their research monographs are examined closely. In other words, while the apparent debate between quantitative and qualitative methodology may have some meaning at the epistemological level, e.g. in terms of causal adequacy as against adequacy at the level of meaning, in the context of research practice there is no direct link between these precepts and particular techniques, since research typically comprises both elements. This is also a clear inference that can be gleaned in the writings of the advocate of methodological 'triangulation'. Indeed, there may be a case for saying that techniques are neutral in respect of epistemological issues and debates.

DISCUSSION

This paper has distinguished between technical and epistemological levels of discussion in the literature dealing with the quantitative/ qualitative distinction. Three areas have been pinpointed in which the levels of discussion become unclear, fundamentally because the writers concerned often shuttle uneasily between epistemological and technical spheres of discourse.

The idea that there is a link between methodology *qua* epistemology, on the one hand, and technical issues relating to research method, on the other hand, is a convention that has increased in prominence in the last ten years or so. The basic problem with this line of discussion, a difficulty which may lie behind some of the inconsistencies which some writers have exhibited, is precisely that it is a convention. There is no necessary 1:1 relationship between methodology and technique in the practice of social research. Snizek[63] has shown, drawing upon an analysis of journal articles, that research techniques cannot be directly extrapolated from a knowledge of a researcher's epistemological assumptions. Similarly Marsh[64] who has also sought to distinguish philosophical issues from technical ones, has questioned whether the survey technique is inherently positivistic. One might equally question whether participant observation is inherently phenomenological, for it is difficult to discern in the writings of generations of social scientists using this technique such as Whyte, Gans or Skolnick,[65] as well as some of the more recent writers, a deep preoccupation with philosophical matters. Rather, they exhibited a concern for achieving a piece of research in a manner that was most appropriate to the topic at hand. Indeed, much of this work could easily be regarded as positivist, or a variant of it, and some writers[66] have located participant observation in the same epistemological space as the social survey. While they may have had a preference for a particular style of research, this preference was more likely to be a personal one, often deriving from their training. It may be that this is not a good reason for choosing a particular research method, but it does suggest that attempting to relate questions of method to philosophical debates in the manner of many recent authors fail to supply a sufficiently accurate account of the research process. It may also be that we are witnessing the classic confusion of 'is' and 'ought', namely that many writers feel that the choice of method should be taken in the light of an appreciation of philosophical contexts, but this is not what they appear to be saying. Their argument seems to be that quantitative and qualitative methodology (and their various synonyms) are or exhibit distinctive epistemologies and that particular methods of research are appropriate to each. The argument of this article is that, while these are highly stimulating suggestions, they need to be subjected

to considerable investigation before they can be considered axioms of research in the social sciences.

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