In the past thirty years or so, the distinction between qualitative and quantitative research has become a key axis in methodological discussions within the human sciences. And there is no doubt that it captures something of importance. However, it is a distinction which is by no means straightforward, either in its meaning or in its significance. Indeed, it often acts as a lightning conductor for numerous other disagreements about the principles and practice of research. In this chapter I examine the main attitudes taken towards this distinction, and consider their cogency.

One of the most influential forms of quantitative research, experimental method, has long been central to the identity of psychology as a discipline, and it still shapes the thinking of the majority of its practitioners. Indeed, for many, experimental work is the *sine qua non* of scientific inquiry. At the same time, there have always been competing definitions of research within the discipline. These have been particularly strong in the clinical and developmental areas. While the experimental paradigm has had powerful sway even there, psychoanalysis (see, for example, Kvale 1986), child study (Wright 1960), and other approaches have, from early on, offered rather different conceptions of psychological research, many of these being closer to what would today be regarded as qualitative method. And more recently, especially within social psychology, there has been a strong reaction against experimentalism, subjecting it to a series of challenges, listed by one commentator as: the artifacts crisis, the ethics crisis, and the relevance crisis (Rosnow 1981). This has led to so-called 'new paradigm' research, itself internally diverse, and more recently still to the development of contextualist and constructionist approaches (Harré and

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1 Published in J. Richardson (ed.) *Handbook of Qualitative Research Methods for Psychology and the Social Sciences*, Leicester, British Psychological Society Books, 1996. Earlier versions of this chapter were given as talks at Brunel University's Workshop in Qualitative Research Methods for Psychologists, held at Cumberland Lodge in March 1993, and at the British Psychological Society (Education Section) Annual Conference at Easthampstead Park in November 1993. A shorter version was published in the BPS Education Section Review, January 1995; and some additional material has been reworked from Hammersley 1992a:ch9. My thanks go to those who participated in the discussions, and to Bob Burden, Tony Cline, Pam Maras, and Peter Pumfrey for responding in print.

2 Symptomatic of this is that, in a book which is otherwise highly critical of scientific psychology, Kline (1988:13) treats scientific method as identical with experimentation.
Secord 1972; Armistead 1974; Reason and Rowan 1981; Rosnow and Georgoudi 1986; Gergen 1985 and 1994). There have also been applications within psychology of qualitative methods developed in sociology and elsewhere, notably discourse analysis and grounded theory (Potter and Wetherall 1987; Henwood and Pidgeon 1992). In addition, the influence of feminism has been important in methodological as well as theoretical terms, and one effect of this has been further to promote qualitative research (Hollway 1989; Wilkinson 1986).

These various ‘alternative’ approaches have adopted somewhat different conceptions of their relationship to experimentalist orthodoxy. As in research in the human sciences generally, these can be ranged along a spectrum. At one end is the idea that ‘qualitative' and 'quantitative' refer to internally coherent and comprehensive research paradigms, which are founded on incommensurable philosophical and/or political presuppositions. At the other end of the spectrum is the belief that quantitative and qualitative are complementary methods which should be used as and when appropriate, depending on the focus, purposes and circumstances of the research. I will examine each of these contrasting views in turn.

**Competing paradigms**

The most common position among qualitative researchers about the relationship between 'qualitative' and 'quantitative' approaches is that these represent fundamentally different paradigms. This view can take at least two forms. Some see these approaches as in conflict: with one as the true way, the other as the way of error or even of sin. Others regard quantitative and qualitative approaches as alternatives that are each true in their own terms, the choice between them being a matter of taste or personal preference. Whichever form of this view is adopted, however, it implies a sharp distinction between quantitative and qualitative approaches in terms of their fundamental assumptions about the world and how it can and should be studied. Bryman has provided a useful summary of some of the contrasting features often ascribed to these two paradigms:

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3 Filstead (1970) comes close to this position, though he seems to back off from it towards the end of his discussion.

4 Smith (1989) takes this view, but he makes it clear which paradigm he regards as superior: see Hammersley 1992b.
There are, however, some serious problems with this ‘paradigm view’ of the relationship between quantitative and qualitative research. For one thing, if we look at research today in the human sciences we find that much of it does not fall neatly into one or other of these two categories. There are multiple methodological dimensions on which research varies, these do not lie in parallel, and each involves a range of positions not just two.

At the level of method, for example, quantitative and qualitative research are sometimes defined as involving the use of different sorts of data. As Bryman indicates, the contrast is frequently formulated as between 'hard data', on the one side, and 'rich data', on the other. These terms are not very illuminating, but some writers have been more specific. Thus, Miles and Huberman (1994:1) begin their discussion of qualitative data analysis with a definition of qualitative data as 'usually consisting of words rather than numbers'. As their qualification allows, however, this difference is a matter of degree: it is certainly not the case that there is one set of researchers who only use numbers and another who only use words. It is true that there are research reports which only provide numerical data, and others which only provide verbal data. But there is also a large proportion of studies which provide both. Thus, many research reports (including some that are regarded as qualitative) combine tables and statistical analysis with the use of quoted extracts from documents, interviews or fieldnotes.

More than this, though, the distinction between numerical and verbal data is of questionable value. Most quantitative data are ultimately based on accounts in words, whether those of the researcher or of subjects, so that there is one sense in which all psychological and social data are fundamentally verbal. Conversely, it has frequently been pointed out that qualitative researchers regularly make quantitative claims in verbal form, using formulations like 'regularly', 'frequently', 'sometimes', 'generally', 'typically', 'not atypically' etc. Yet the fact that they use words instead of numbers does not alter the character of their claims.

Several distinct issues are involved in the contrast between numerical and verbal data. One is the question of the precision of description. However, this does not involve a clear-cut choice between two options. The levels of precision adopted
by quantitative researchers vary according to the nature of the data available and the purposes for which the measurement is being carried out. It is widely recognised that we should not express our results in terms which imply a greater degree of precision than their likely accuracy warrants; and it is also true that adequate precision may not always require the use of numbers. Sometimes, it may not be legitimate to use terms that are more precise than 'sometimes', 'often', 'generally' etc. even where what is being measured is scalable in principle, given the nature of the data and/or the purposes for which they are being used. And where we are concerned with the presence or absence of a particular type of feature in a situation, this can often be described quite precisely in verbal terms.

Precision is not the only issue involved in the contrast between quantitative and qualitative data, of course. Qualitative researchers' references to the richness of their data relate to at least two other features. One is the fact that it is framed in terms of the broad and flexible resources of natural language, rather than the finite descriptive repertoire provided by a measurement scale. The other is that it is not narrowly restricted to information that is directly relevant to the research question being investigated, so that information about the wider context is also provided (see Delamont and Hamilton 1984). Here again, though, how valuable these features are is a matter of degree and of judgment; as also is how wide a range of descriptive resources is used and how much contextual information is collected and provided. We are not faced with a choice between finite or infinite resources, and between no contextual or full contextual information, but rather between varying amounts of each.

There is no stark contrast to be found, then, between verbal and numerical, or even between precise and imprecise, structured and unstructured, contexted and uncontexted data. Rather, there is a range of more to less precise, structured, and contexted types of data from which to choose. Furthermore, our decisions about what level of precision, structure, and context is appropriate in relation to any particular study should depend on the nature of what we are trying to describe, on the likely

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5 My own use of imprecise formulations will not be lost on the reader!
6 Needless to say, there are times when qualitative researchers use verbal formulations which are insufficiently precise for their purposes. See Hammersley 1991:65-6.
accuracy of our descriptions, on our purposes, and on the resources available to us; not on ideological commitment to one methodological paradigm or another.

Much the same is true of another much-cited difference between qualitative and quantitative methods. It is sometimes argued that quantitative researchers collect data in 'artificial' settings, while qualitative researchers use 'natural' settings. Thus, experiments are artificial in the sense that they involve study of a situation specifically established and controlled by the researcher. By contrast, ethnographic research, in particular, is usually concerned with the investigation of situations that would have occurred without the ethnographer's presence, and generally involves the adoption of a role in that situation which is designed to minimise the researcher's impact on what occurs.

Once again, though, this is not a simple dichotomy. Quasi-experiments and field experiments are specifically intended to reduce the 'artificiality' of the experimental situation, while maintaining some control of variables. Moreover, some quantitative researchers carry out their research in natural settings, notably in the form of ‘systematic observation’ (see Croll 1986). Conversely, qualitative researchers, even ethnographers, use interviews as well as observation, sometimes adopting quite directive interviewing strategies, and thereby creating what may be relatively 'artificial' data collection contexts (see Hammersley and Atkinson 1995:ch5). There is, then, a complex array of potential data collection settings which are more or less ‘artificial’ and ‘natural’.

Over and above this, though, the distinction between artificial and natural settings is potentially misleading. What happens in a school classroom or in a court of law, for example, is no more natural than what goes on in a psychological laboratory. To treat classrooms or courtrooms as natural, and experiments as artificial, is to forget that research is itself part of the social world, something which should never be forgotten. Of course, there is an important issue implicit in this distinction, relating to variation in the extent to which the researcher is able to control variables, and the degree to which reactivity is introduced. But these are matters of degree. While experiments provide us with a much stronger basis for drawing conclusions about causal relationships than do either surveys or case studies (other things being equal), they never give us total and guaranteed control of variables. Conversely, we can
sometimes still draw reasonable conclusions about the validity of theoretical claims on the basis of evidence from the naturally occurring comparative cases studied by survey and case study researchers.

In much the same way, qualifications must also be applied to criticisms of experiments which claim that their findings do not generalise to the 'real world', that is to non-experimental situations (see Rosnow 1981:ch3; Greenwood 1982). While it is true that subjects' behaviour is often influenced by the experimental situation and by the personal characteristics of the experimenter (and his or her assistants), this by no means renders the results of experimental research of no value. Much depends on whether the reactivity involved affects the results in ways which are relevant to the research topic and in a manner that cannot be allowed for. Moreover, even ethnographic research in 'natural' settings is not immune to reactivity. While the ethnographer may strive to minimise her or his effects on the situation studied, this cannot be guaranteed; and, sometimes, the effects can be significant despite the researcher's best efforts. We must also remember what the significance of reactivity is: it makes the setting investigated unrepresentative of those others about which the researcher wishes to generalise, an issue sometimes referred to as ecological validity. But reactivity is not the only source of ecological invalidity. Even without this, a natural setting can be unrepresentative because it differs in important ways from most other cases in the same category. Simply choosing to investigate 'natural' settings and seeking to adopt a low profile within them, or analysing 'naturally occurring data' such as recorded talk or published texts, does not ensure ecological validity (see Dipboye and Flanagan 1979).

In summary, then, the difference between quantitative and qualitative approaches is not clear-cut as regards the use of particular kinds and sources of data. Rather, what we find is a range of methods being used by researchers in the human sciences, a diversity that cannot be reduced to a dichotomy without serious distortion. Furthermore, selection amongst these methods requires judgment according to situation and purpose, rather than being based on a commitment to one or another competing philosophical view of the world and of the nature of inquiry.

Some of those who regard 'quantitative' and 'qualitative' as referring to incommensurable paradigms recognise that there is diversity at the level of methods
used, but they insist nevertheless that there are just two (or a very small number of) coherent philosophical perspectives underlying research in the human sciences, often tracing the history of these competing paradigms back into the nineteenth century (see, for example, Smith 1989). However, while it is certainly true that much nineteenth century debate about the scientific status of the discipline of History foreshadowed the arguments about quantitative and qualitative method in the human sciences in the twentieth century, these discussions did not take place between representatives of just two contrasting positions. Nor is there direct continuity between nineteenth century positions and those adopted today (see Hammersley 1989). Moreover, the appeals of psychologists and social scientists to philosophical rationales for their work are as diverse as the methods they use.

Let us look briefly at three respects in which quantitative and qualitative paradigms are often taken to be philosophically opposed: in terms of realism vs idealism, naturalism vs anti-naturalism, and deductivism vs inductivism. Smith, among others, argues that quantitative research is wedded to a realist epistemology, in the sense of assuming that true accounts correspond to how things really are and that competing accounts must be judged in terms of whether the procedures adopted ensure accurate representation of reality. By contrast, qualitative method is idealist, he claims, in that it rejects any possibility of representing reality: it recognises that there may be 'as many realities as there are persons' (Smith 1984:386).

I think it can be shown with little difficulty that this is inaccurate as a characterisation of the distribution of philosophical perspectives among researchers. First, not all quantitative researchers are realists. Take the following quotation:

In any valid epistemological or scientific sense we must say that the substitution of a Copernican for the Ptolemaic theory of the universe represented a major change in the universe. To say that it was not the universe but our conception of it which changed is merely a verbal trick designed to lead the unwary into the philosophical quagmires of Platonic realism, for obviously the only universe with which science can deal is 'our conception' of it.
What we have here is an idealist account of natural science knowledge in which there is a denial that it can represent some independent reality. But it does not come from a qualitative researcher. It comes from George Lundberg, a positivist champion of quantitative method in sociology in the 1930s who was strongly influenced by contemporary developments in psychology (Lundberg 1933:309). There was a strong element of phenomenalism in late nineteenth and early twentieth century positivism (see Kolakowski 1972). This was reflected in psychology in the form of operationism, whose advocates insisted that it made no sense to see measurement operations as representing some reality existing beyond them, since there could be no knowable reality beyond experience (Benjamin 1955).

By contrast, qualitative researchers have often adopted a realist position. Thus, Herbert Blumer writes in a characteristically realist fashion of naturalistic, or qualitative, research being concerned with 'lifting the veil' that covers reality and 'unearthing' what is going on (Blumer 1969:39). In more recent times, Harré has based his advocacy and practice of ethogenic research in social psychology on an explicit realism (Harré and Secord 1972; Harré 1979). Many other contemporary exponents of qualitative method have also declared allegiance to realism (see, for example, Porter 1993 and Miles and Huberman 1994:4). Indeed, of late, the reliance of ethnography on realism has come under increasing criticism, from those influenced by post-structuralism (Clifford and Marcus 1986; Denzin 1990) and from constructionists (Woolgar 1988). What this suggests is that there is no simple match between the realist/idealist and quantitative/qualitative distinctions.

Again, quantitative method is often regarded as taking natural science as its model, while qualitative researchers are seen as rejecting that model. In other words, quantitative research is believed to be founded on naturalistic, and qualitative work on anti-naturalistic, assumptions. It is worth noting, however, that many qualitative researchers have treated the natural sciences as exemplary. Early advocates of qualitative method, such as Thomas and Znaniecki (1927:1), saw their work as

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7 By 'phenomenalism' I mean the view that we can only have knowledge of how things appear to us---in Kant's terms we can only know \textit{phenomena not noumena.}

8 By 'realism' I mean the idea that the task of research is to document features of objects which exist independently of the researcher's interpretation of them.

9 There is a problem of terminology here. I am using the original meaning of 'naturalism', but some qualitative researchers have redefined it radically and applied it to their own approach: see Lofland 1967, Blumer 1969, and Matza 1969.
modelled on the successful approach of natural science. And while today most qualitative researchers are more guarded about the parallels between their work and that of natural scientists---some even rejecting the natural science model outright---there are still advocates of qualitative method who justify their approach in naturalistic terms. Once again, the work of Harré and those influenced by him is an obvious example. It is also worth noting that some of the techniques employed by qualitative researchers assume much the same law-like conception of the world as natural science (see Hammersley 1989:ch8).

In fact, the issue of whether natural science is an appropriate model for research in the human sciences is by no means a simple one. There are at least three complications:

i) We must consider which natural science is being taken as the model, and during which period of its development. There are significant differences in method between physics and biology, for example; and, indeed, variation within each of these disciplines over time.

ii) Which interpretation of the methods of natural science is to be adopted? Keat and Urry (1975) identify positivist, conventionalist, and realist interpretations of these methods; and even these distinctions do not exhaust the variety of views to be found among philosophers of science.

iii) What aspects of natural science method are to be treated as generic? Not even the most extreme positivist would argue that the methods of physics should be applied in toto to the study of human beings. And there are few who would insist that there is no aspect of natural scientific inquiry that is relevant to research in the human sciences. What is at issue is a matter of degree.

In terms of naturalism also, then, we do not find a contrast between just two incommensurable philosophical positions. And neither quantitative nor qualitative research is wedded exclusively to one position.

Much the same is true of deductivism versus inductivism. Qualitative researchers sometimes characterise their approach as inductive, contrasting it with the
deductive, or hypothetico-deductive, method of quantitative research. But this is an over-simplification. Not all quantitative research is concerned with hypothesis-testing. Many psychological and social surveys are straightforwardly descriptive, and some quantitative research is explicitly concerned with theory-generation.\textsuperscript{10} Equally, by no means all qualitative researchers reject the hypothetico-deductive method. Strauss, one of the developers of grounded theorising, which was originally presented as opposed to deductivism (Glaser and Strauss 1967), insists that this technique involves not only induction but also deduction and verification (Strauss 1987:11-12). In fact, of course, all research involves both deduction and induction in the broad senses of those terms: in all research we move from ideas to data as well as from data to ideas. What \textit{is} true is that one can distinguish between studies which are primarily exploratory, being concerned with description and with generating theoretical ideas, and those which are more concerned with testing hypotheses. But these types of research are not alternatives; we need both. Nor is the former necessarily quantitative and the latter qualitative.

It seems clear, then, that the paradigm view of the relationship between quantitative and qualitative approaches is empirically inaccurate, not just at the level of method but also at that of the philosophical assumptions guiding research. It is also misleading in its portrayal of the options available to researchers: it implies that we are faced with two homogeneous traditions that are internally coherent and based on opposed philosophical views. In fact, there is a considerable range of data collection and analysis techniques in the human sciences, varying in all manner of ways; and there is no fixed relationship between philosophical views and the use of particular methods. Furthermore, even the most superficial perusal of the philosophical literature shows that there are not just two epistemological positions from which to choose. We do not have to be \textit{either} naive realists/empiricists or idealists/relativists. In epistemology, as in methodology, such dichotomies obscure the range of possibilities open to us.

Rather than reducing the methodology of the human sciences to just two (or even three or four) approaches, we need instead to recognise the diversity of methodological options available, and to note that these arise not just from

\textsuperscript{10} See Baldamus 1979 for an example of inductive quantitative analysis; and Erickson and Nosanchuk (1979) for techniques specifically designed to explore quantitative data sets.
Methodological eclecticism

My discussion of the paradigm view of the relationship between qualitative and quantitative approaches implies that there may be a good deal to be said for the opposing argument, for the idea that these are simply different methods that are appropriate for use according to purpose and circumstance. What is implied here is a form of methodological eclecticism. Indeed, the combination of quantitative and qualitative methods is often proposed, on the grounds that this cancels out the respective weaknesses of each method.

Such eclecticism has a long history in the literature (see, for example, Zelditch 1962 and Sieber 1973). It has the advantage of recognising the diversity of methodological approach to be found in the human sciences, and in particular the way in which quantitative and qualitative techniques are often used side-by-side within the same research (see Bryman 1988 and 1992). This can take at least three forms:

1. **Triangulation.** Here, the findings from quantitative and qualitative techniques are used to check one another, on the basis that they are likely to involve different sorts of threat to validity. For instance, children's responses to a questionnaire about with whom they are friends can be compared with ethnographic observation of whom they talk to and play with in the classroom and playground (see, for example, Denscombe et al 1986).

2. **Facilitation.** Here one approach acts as a source of hypotheses or as a basis for the development of research strategies in the other. For example, qualitative interviewing may be used as a preliminary to survey research, both to generate hypotheses and to develop questionnaire items that are intelligible to the intended audience. It may also be used as a means of debriefing subjects who have taken part in experiments, so as to understand why they behaved in the way that they did (Crowle 1976). Alternatively, the findings of experimental or survey research may serve as a basis for the initial framing of
research problems in qualitative work and even as a source of hypotheses to test. A famous example is Festinger et al’s (1964) testing of cognitive dissonance theory through a participant observation study of an apocalyptic religious group.

3. Complementarity. Here the two approaches provide different sorts of information which complement one another. Thus, qualitative research is sometimes regarded as better able to provide information about interactional processes and about subjects' perspectives, whereas quantitative method is presumed to be better at documenting frequencies and causal patterns. Thus, experiments may be regarded as providing a strong basis for revealing causal relationships among variables, but one which is usefully complemented by qualitative research which can show how these relationships operate in 'natural' situations. Equally, qualitative research is sometimes regarded as more capable of providing detailed and accurate information about a small number of cases, while some kinds of quantitative research establish the basis for wider generalisation.

This methodologically eclectic view of the relationship between quantitative and qualitative method also has the advantage of emphasising the practical character of research. One of the weaknesses of the paradigm view is that it seems to imply a form of linear rationality, whereby researchers first decide on their philosophical commitments and then base their selection of research topics and strategies on those commitments. Little needs to be said to establish that this is not true empirically. As researchers, in large part we acquire the resources that make up our methodological orientations from others working in the field, and in this way we inherit practical methods and philosophical assumptions simultaneously. Indeed, there are probably presuppositions built into our approach of which we are not even aware. Thus, the way in which research is carried out is not in any simple sense derived from, or built upon, a set of foundational philosophical presuppositions. Indeed, the decisions taken in research necessarily rely heavily on practical considerations regarding the particular goals of the research, the resources available, the obstacles faced, etc.

Despite all this, however, methodological eclecticism is not entirely satisfactory as a way of thinking about the relationship between quantitative and
qualitative approaches. For one thing, it may encourage us to forget the many unresolved methodological and theoretical problems which surround research in the human sciences. For example, where quantitative research necessarily tends to assume the existence of reproducible causal patterns, qualitative researchers have often stressed the contingent and diverse character of human perceptions and actions, and the role of cultural interpretation in these. Some qualitative researchers fear that a rapprochement with quantitative research will lead to the distinctive methodological ideas associated with their approach being forgotten (Smith and Heshusius 1986).

There is certainly a danger of this, and it would result in us losing sight of something important about human behaviour: that it does not seem to be a causal product in the same sense, or to be affected by the same sort of mechanisms, as the behaviour of physical or even of biological phenomena.

The reverse danger also applies. Experimental psychologists have often insisted that research in the human sciences cannot avoid assuming some sort of causality, or law-like relationship, analogous to what is characteristically assumed by natural scientists. And they have also emphasised the weak capacity of non-experimental research for identifying causal relationships. These are important points which could also be lost in the adoption of a methodologically eclectic approach. It is not uncommon to find qualitative researchers apparently believing that they are able to ‘see precisely which events led to which consequences’ (Miles and Huberman 1994:1). There is a fundamental disagreement here about the nature of the the 'orderliness' of phenomena assumed by the human sciences and how it can be identified; and this is a disagreement which has not been satisfactorily resolved as yet. It is tempting for the methodologically eclectic to dismiss such matters as merely 'theoretical', yet they have important implications for how we do research and for what conclusions we can draw on the basis of it.11

An emphasis on the practical character of research is certainly of value, then, but we must also recognise that the practice of research rests on presuppositions which are often problematic. A pragmatic orientation can easily lead to a failure to recognise this. It tends to treat the methods used by quantitative and qualitative

11 For example, the views of ethnomethodologists are discrepant not only with quantitative but also with most qualitative research, even that of constructionists. See Button 1991 and Button and Sharrock 1992.
researchers as given, as merely technical matters. I can illustrate this more concretely by looking at an example of combining qualitative and quantitative techniques which is often recommended. It is frequently suggested that we can combine social survey and case study techniques in such a way that the former provides generalisability while the latter offers detail and accuracy. I do not want to deny that combining these methods can be of value, but it is not as straightforward as is sometimes supposed.

For one thing, this recommendation tends to assume that generalisation from a sample of cases to a larger population is always part of the task of research. There are two reasons why this is not so. First, sometimes we are intrinsically interested in particular cases. This is most obviously true with some evaluation research and with much action and practitioner research. But even in more traditional kinds of work occasionally our interest is in the case studied for itself, because that case has general social significance. An obvious example would be investigation of the work of a Government department or agency, since its decisions have nation-wide effects.

A second reason why we should not see all research as concerned with empirical generalisation is that it is important to distinguish between generalising from a sample to a finite population, on the one hand, and making inferences about the truth of a theory, on the other. Thus, some research is concerned not with empirical generalisation but with theoretical inference.

Empirical generalisation and theoretical inference are often conflated, by both qualitative and quantitative researchers. Indeed, there are those who would reject this distinction itself, arguing that inferences about the truth of a theory are one form of generalising from sample to population. But this neglects an important difference between the two. Theories apply to all circumstances where the conditions specified within them hold. For example, labelling theory in the social psychology of deviance holds that the application of a deviant label by a powerful agency leads under certain circumstances to changes in the identity and circumstances of the person labelled, such that their subsequent behaviour reinforces the labelling. And the implication is that this occurs wherever the relevant conditions are to be found: labelling has had these effects in the past, is having them in the present, and will continue to have them
In short, theories refer to an infinite population of cases, and one which we cannot get access to in such a way as to be able to draw representative samples. This is different in significant respects from the situation where we are seeking to generalise to a finite and accessible population. However, the difference is not just a practical one. It relates to the way in which the population is constituted in each instance. Assuming that a theory is true, the population defined by its conditions is causally homogeneous; whereas the populations to which empirical generalisations relate need not be (and usually are not). Indeed, it is this causal homogeneity which provides for the possibility of theoretical inference in the absence of representative sampling. For these reasons, where our concern is with developing and testing theory it is not immediately obvious that social surveys are better than case studies; or even that case studies need to be supplemented by social surveys. At least, any argument to this effect would have to be more than an appeal to the superiority of surveys as a basis for empirical generalisation.

Moreover, even if we restrict ourselves to generalisation from sample to finite population, we must not assume that case study is incapable of this. It is true that within survey research this sort of generalisation has come to be almost entirely identified with the use of statistical sampling techniques, and that these demand information on relatively large samples. But this is a confusion of purpose with particular means, very useful though those means are. Rather surprisingly, some advocates of case study have accepted criticism of their work which suggests that it is incapable of empirical generalisation, meeting this charge with a denial that it ever relies on such generalisation (see, for example, Yin 1989). They insist that case study is concerned only with theoretical inference. And yet, if one looks at much qualitative research, this is manifestly not the case. Many case studies draw conclusions that imply empirical generalisation. For example, in the introduction to his well-known study of an English secondary school, Ball (1981:20) reports that 'nationally, Beachside appears to be a fairly typical established comprehensive [...]'. In this way he claims that his findings are representative of many other comprehensive schools. Such claims about typicality are commonplace in qualitative research.

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12 My interpretation of labelling theory is a rational reconstruction which would not be fully accepted by all of those who were involved in developing it. See Becker's (1973) discussion of some of the debates surrounding it.
It is important to recognise that statistical sampling is not the only method of assessing the representativeness of a sample or a set of cases. Others include comparing the cases studied with the population to be represented, where information is available about relevant features of that population, for example in official statistics or in other studies in the literature. Another is the use of multi-site investigations, where sites are selected by means of sampling decisions that are designed to represent relevant kinds of heterogeneity in the population. Nor is size of sample always crucial: where we can be fairly sure a population is homogeneous in relevant respects, a case study or a small number of cases can be an adequate basis for generalisation. In this connection it is worth remembering that most sampling in survey research relies not just on statistical sampling theory but also on knowledge about the population, which is used as a basis for stratifying the sample. Furthermore, the validity of generalisation is always a matter of judgment, even when we use statistical sampling techniques.

Also significant is the fact that where case study is concerned with generalising to a finite population this is not always to a population which is accessible to statistical sampling. Whenever we are faced with claims about typicality or representativeness we must ask: typical or representative of what, and in what respects? In an interesting article on generalisability in qualitative research, Janet Schofield points out that the populations to which we wish to generalise are often of cases that may occur in the future or even of those that could occur. And she discusses a number of sampling strategies which qualitative researchers can use to facilitate generalisation to such populations (Schofield 1989). A well-known example of research using such a strategy is Cicourel and Kitsuse's study *The Educational Decision Makers* (Cicourel and Kitsuse 1963). These authors chose to investigate a school which was markedly atypical at the time that they studied it, but which they believed represented how American schools would be in relevant respects in the future; in particular in having a highly developed student counselling system. This is what is sometimes referred to as critical case analysis, and what this example illustrates is that it can be an effective strategy for empirical generalisation as well as for theoretical inference.

This discussion of generalisability and the relationship between case studies and surveys points to a need to rethink some of the methodological ideas often
associated with both qualitative and quantitative research. First, we must question the frequently assumed omni-relevance of empirical generalisation, that is of generalisation from a sample to a finite population of extant cases. Second, we must resist the tendency to conflate theoretical inference and empirical generalisation. Third, we must recognise that empirical generalisation is often a relevant goal in case study work. But, finally, we must not confuse such generalisation with the statistical means used to achieve it in survey research. In this example, and others, simply treating quantitative and qualitative methods as adequate as they stand and putting them together is unacceptable. It is to ignore the fact that they are not just methods but carry methodological presuppositions with them. And these may be in conflict with one another, and are sometimes unreliable.

It is also worth noting that both the paradigm view and methodological eclecticism share something in common: treating quantitative and qualitative as of equal value and as complementary still assumes that the methods of social and psychological research can be neatly assigned to two categories, and that differences within each category are less important than those between them. But this is to neglect the heterogeneity and internal inconsistency to be found within two rather artificial categories. The diversity of what counts as qualitative research should be all too obvious from the other chapters in this book. Nor is this diversity limited to the use of different methods. There are fundamental disagreements amongst qualitative researchers at a philosophical and political level. We can see this most clearly in the field of educational research, where the main methodological disagreements are no longer between representatives of quantitative and qualitative research, but between those adopting mainstream qualitative approaches and those advocating various radical alternatives, notably constructionists, critical researchers, feminists, and post-structuralists (see, for example, Guba 1990; Eisner and Peshkin 1989; Gitlin et al 1988; Denzin and Lincoln 1994). And these divisions of opinion are at least as deep as those which were believed to separate quantitative and qualitative researchers. Moreover, while the differences in approach and perspective to be found among quantitative researchers are perhaps less fundamental, they are by no means insignificant (see, for example, Mook 1983; Lieberson 1985; Levine 1993). Given this heterogeneity, even the methodologically eclectic are in danger of treating the qualitative-quantitative distinction as more informative than it is.
Conclusion

In conclusion, then, neither of the two views I have discussed---that quantitative and qualitative are competing paradigms or that they are of equal value and should be used as and when appropriate---is acceptable. This is partly to do with their differences, partly to do with what they share. On the one hand, we have the contrast between two false positions: the idea that research is founded on philosophical presuppositions that govern it or should govern it, versus the idea that the presuppositions associated with particular research strategies can be ignored or taken as they stand. On the other hand, we have the shared, but mistaken, assumption that we are faced with two contrasting but internally homogeneous and consistent approaches.13

The upshot of my argument is that in many respects the quantitative-qualitative distinction is unhelpful. It does not accurately map differences in practical methods or in philosophical position to be found amongst researchers. It provides only a crude characterisation, and one that can often be misleading. I think we need to give greater attention to the diversity of methods to be found in the human sciences, and to think through some of the methodological arguments that surround quantitative and qualitative approaches. Of course, I recognise that this is not easy, and that at present at least we cannot simply abandon the qualitative-quantitative distinction.

However, let me give a brief outline of the direction in which I think we need to go. We require a more subtle set of distinctions relating to different facets of the process of doing research. For example, I think we can distinguish five aspects of the research process: formulating problems, selecting cases, producing data, analysing data, and communicating findings.14 These apply to all kinds of research, and in respect of each of them there are several strategies available to researchers. For instance, I am inclined to restrict the terms 'experiment', 'survey' and 'case study' to refer to contrasting ways of selecting cases for investigation; rather than to use them to refer to whole research methods, as they normally tend to be. In these terms, what

13 For a parallel critique of these two positions, see Walker and Evers 1988.
14 I have referred to these as 'aspects' rather than as 'phases' or 'stages' of research because they are rarely dealt with in strict sequence and usually overlap to some degree.
is distinctive about an experiment is that the researcher creates the cases to be studied through manipulation of the research situation, thereby controlling both treatment and at least some relevant extraneous variables. The distinctiveness of surveys is that they involve the simultaneous selection for study of a relatively large number of naturally occurring (rather than researcher-created) cases. Finally, from this perspective, case study consists of the investigation of a relatively small number of naturally occurring cases (Hammersley 1992a:ch11). In the same way, we can take each of the other four aspects of the research process and identify various strategies available in relation to them.

While which strategy or strategies we choose for dealing with one aspect of the research process may sometimes have implications for what we can or should choose in relation to others, the degree of constraint involved is nowhere near as great as the quantitative-qualitative distinction implies. Here are some combinations of strategies which that distinction tends to obscure: studying a single case can involve the collection of *structured* data and the application of *quantitative* analysis to it (Hersen and Barlow 1976; Kratochwill 1978); *unstructured* data can be collected but subsequently coded and subjected to *quantitative* analysis (see, for example, Scarth and Hammersley 1988); and it is possible to collect *unstructured* data on a large number of cases and to analyse it in *qualitative* terms, especially when the cases are small-scale (see, for instance, Strong 1979).

Equally important, there is a tendency for both quantitative and qualitative researchers to assume a single model of the research process and its products, as if this exhausted the ways research is done and what it produces. Thus, quantitative researchers tend to assume that all research is concerned with hypothesis-testing, being designed to confirm or disconfirm a theory. Qualitative researchers, on the other hand, frequently see their work as necessarily exploratory, as concerned with generating theoretical (or 'thick') descriptions or grounded theory. Both these views take the single study as the unit of research, instead of recognising that the character and products of research may need to vary over the course of research programmes in particular fields. The most obvious example of such variation is a more exploratory orientation in the early stages of a programme, a more hypothesis-testing orientation later. But this is too simplistic: it is more accurate to think in terms of iterative cycles of exploration and testing. Moreover, we need to recognise that structured data
collection and statistical analysis can be concerned with exploring patterns in data and developing theoretical ideas; while qualitative case studies can be used to test theories. Recognition of both these points—that the goals of research vary according to the stage it has reached, and that there is no fixed relationship between qualitative and quantitative method and any particular stage—is discouraged by commitment to the qualitative-quantitative divide.

What is required in my view, then, is a methodologically aware eclecticism in which the full range of options is kept in mind, in terms of both methods and philosophical assumptions. The practical character of research decisions should be recognised, but this must not lead us to ignore the methodological problems and debates involved. And while (for the moment at least) we cannot do without the distinction between quantitative and qualitative approaches, we must remember that it is a poor methodological guide to research in the human sciences.

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