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Which methodology should I choose? Qualitative, quantitative, or both?

An account of understandings of ontology, epistemology and methodology in modern social research

Research Methods
MSc Occupational Psychology

Qualitative / quantitative debates

For many years now within the social sciences, a philosophical debate has been underway, with researchers debating the best methods that science can use to research the social world. Typically this debate focuses on which of two methodologies – or ways to study the social world – are the most appropriate.

Positivist methodology – in which a removed observer attempts to establish relationships between phenomena – is traditionally associated with quantitative methods of data analysis. These attempt to operationalise and give numerical values to social phenomena. The interpretivist methodology uses a more involved researcher attempting to understand the complexities of the social world. Traditionally this has involved qualitative techniques, which aim to develop a rich and complex understanding of each individual's interpretation of that world.

In many cases this association between technique and methodology has lead to researchers renaming the positivist and interpretivist methodologies the quantitative and qualitative methodologies (Guba, 1985; Bryman, 1984).

My only objection to such a split is that it presupposes that interpretivist / qualitative and the positivist / quantitative methodologies are mutually exclusive. However, some elements of each methodology are not opposed, and as Hammersley (1998) notes, techniques used in the field cannot always be seen as strictly qualitative or quantitative. One example of methodologically diverse principles that could be used together is the principles of researcher involvement in interpretivist methodology and of hypothesis testing within the positivist methodology.

It has been argued (eg. Guba, 1985), that it is misleading to allow the use of hybrid qualitative and quantitative techniques, or to mix techniques. Such a research strategy might suggest that the methods we choose need not be influenced by our ideas about knowledge within the world. This would suggest that only pure qualitative or pure quantitative methodologies could be used to investigate the social world. To only allow for two methodologies, however, presupposes that there are only two ways of knowing, understanding, and learning about the world. I argue that this is a fallacy,

and it is this fallacy, not an innate quality of social research, which leads to the idea that qualitative and quantitative methodologies cannot be combined.

Prevalent ideas in social research

One of the most influential texts on the philosophical debates in social research is by Burrell and Morgan (1979), which may hold some responsibility for the belief that the nature of social research can be split into two camps. Burrell and Morgan described some issues concerning the nature of social research - including ontology, epistemology, and methodology – and described for each the extreme views that one could hold on each issue.

In social science ontology describes the reality that a scientist holds to exist – the extremes for Burrell and Morgan being whether a 'true', objective reality can be found (realism) or if these apparent 'truths' are just created by individual cognition and social transmission of these ideas (nominalism or subjectivism).

The epistemological debate concerning how knowledge can be held about the world, is presented in a similar way – either knowledge about the social world can be proved or disproved, leading to the uncovering of laws about its workings (objectivism or positivism) or perhaps knowledge can only be held by an individual, and uncovering an individual's subjective knowledge about the world is all research can do (relativism or anti-positivism).

The methodological section describes the positivist (or nomothetic) and the interpretivist (or ideographic) poles in similar terms those used in the introduction.
The ontological, epistemological and methodological views were then aligned by Burrell and Morgan to describe the traditional research methods of social science.

Within this bipolar alignment of theories about the world, knowledge and research, most researchers in psychology today are thought to hold what Burrell and Morgan (1979) call the 'sociological positivist' and 'objectivist' point of view, with a realist ontology, positivist epistemology and positivist methodology (Hammersley, 1998).

The opposing point of view is the 'German idealist' or 'subjectivist' view which springs from a nominalist ontology, anti-positivist epistemology, and interpretivist methodology.

Burrell and Morgan describe these philosophical positions with reference to the history of social research. They note that the subjectivist and objectivist views are the paradigms within which social science research was conducted previous to their book's existence, and it can sensibly be argued that these paradigms are alive today.

My argument is that since the publication of this work, and in many ways because of it, research has become more varied. Researchers are becoming gradually more informed about the assumptions behind the way in which they study the social world, and are no longer so extreme in their ontologies or epistemologies.

So while Guba (1985) states that Burrell and Morgan's paradigms should dictate the methods we use to investigate the social world, it appears to me that Burrell and Morgan did not intend to suggest that only extreme subjectivist and objectivist point of views were valid. Their model, in a sense, was more descriptive than prescriptive, and meant to invite researchers to question rather than create the positions from which they conducted research.

Evidence for this point exists for the descriptive nature of Burrell and Morgan's work lies on two levels – their ideas about the positions one can hold on the objective-subjective dimension they create, and their ideas about how ontology, epistemology and methodology relate to each other. These two points are detailed below:

Strong and weak subjectivist-objectivist views

On Burrell and Morgan's subjectivist-objectivist dimension one can hold either extreme or weak subjectivist or objectivist viewpoints. They themselves describe how:

"intermediate points of view have emerged, each with its own distinctive configuration of assumptions about the nature of social science" (Burrell and Morgan, 1979, p8).

By allowing researchers to take a position on a continuous scale, with strong subjectivism at one end and strong objectivism at the other, Burrell and Morgan suggest that views concerning ontology, epistemology and methodology need not be extreme.

This suggests that the presentation of the social research as a dichotomous subjectivist or objectivist measure is done for convenience, and as a reflection of the contemporary world of social research. If ontology and epistemology can be weak or strong according to this model, then it seems logical to assume that methodology (which is also contained within the subjectivist-objectivist dimension) can have weak or strong interpretivist or positivist principles.

Conflicting ontological and epistemological views

The meaning of the subjectivist-objectivist dimension itself has also been rather misunderstood. By using a single measure of ontology, epistemology and methodology, Burrell and Morgan (1979) seem to be implying that one's ontological position must match one's epistemological position etc. However, early in the text they state that:

"We wish to argue here that considerable advantages accrue from treating these … strands of social-scientific debate as analytically distinct … in practice there is often a strong relationship between the positions adopted on each of the ... strands" (Burrell and Morgan, 1979, p7).

Again, this suggests that Burrell and Morgan's model is geared towards description. Furthermore, the admission that ontology and epistemology can be separated from this subjectivist-objectivist dimension suggests that we might hold ontological and epistemological views that are not traditionally aligned.

At first this idea seems outlandish – it is hard to imagine a researcher with a subjectivist ontology and an objectivist epistemology, for example. However, I hold just such a realist and relativist point of view. I do believe that there is a 'true' world of structured phenomena – a predominantly realist ontology. Yet as research must be carried out by an agent within the social order, knowledge of that social order will doubtless colour the research. I therefore find it unlikely that objective knowledge of the 'true' world can be obtained – a more relativist epistemology.

A similar idea is portrayed by Lone Scocozza (2000) in her article critiquing the philosophical basis of medical drug trials. She holds that research's attempt to understand the objective world is coloured by the fact that our understanding is obtained through researchers' perceptions of that world. However, the aim of science is to bring these perceptions as close to the real world as possible. It is as though we can only study a reflection of the world, but as are gradually developing knowledge to makes that reflection as clear and accurate as possible.

With such diverse ontology and epistemology, it seems useless to select either a positivist or an interpretivist methodology. It is important that if genuine causal relationships exist in the world these should be understood. Understanding causalities would allow creation of an accurate reflection of the world, and would require quantitative methods. However, it is also important within realist / relativist framework to understand how perceptions of the world are created. This would require a broad understanding of the perceptions of both researchers and participants through qualitative methods.

The confusion in modern research

The argument that we must either use interpretivist or use positivist methodology in our studies, according to where fit we fit in Burrell and Morgan's paradigms is not, therefore, necessarily useful. On the other hand, it is entirely contrary to my intent to argue that a mix of methods is justifiable from all ontological and epistemological viewpoints.

Those who do not hold a strong position on the subjectivist-objectivist continuum, or who have mixed ontological and epistemological beliefs like myself, may not fit within Burrell and Morgan's paradigms. In this case combining some interpretivist and positivist principles, and even some qualitative and quantitative techniques, is justified.

Researchers may appear to be using technique incompatible with their paradigmatic beliefs (Hammersley, 1998), but by my understanding of Burrell and Morgan's model they may well be using methodologies that compliment their beliefs more complex than those in the paradigm model. What certainly is a problem is that instead of using the model to understand research, and critique their own research strategies, researchers may be using the model to constrict their ideas about research.

It would perfectly possible from this point to catalogue a wide range of ontological and epistemological positions that could be held, and to describe the methodologies that researchers might justify using within each position. My remit, though, is to describe the methodological consequences of my own ontological and epistemological beliefs. It is therefore time to step back from this wider picture of social research, and to discuss exactly what consequences, if any, my realist / relativist ideas have for my own use of methodologies.

Combining realist ontology with relativist epistemology

One of the largest concerns I have with subjectivist ontology is its apparent denial of progress in science. Each study carried out under a subjectivist ontology develops knowledge restricted to the individual under study. This concern is one of the main reasons for my adoption of a realist ontology, which assumes that science can get closer to understanding of the objective world, and each new piece of knowledge adds a little towards creating a comprehensive understanding of the social world.

Combining this realist position with a relativist epistemology creates certain problems, though. If I discovered an apparent causal relationship within my research,

it would be impossible to establish it as a 'true' relationship. No matter how many times the same relationship is discovered, its appearance may be context-specific and it would never be truly possible to be sure that my perception of the world accurately mirrored the real world. However, a causal relationship that constantly generalises across individuals, time and space, is a better and better candidate for a true representation of the objective world.

If no causal relationships emerge in study, or a number of causal relationships are found inconsistently, the realist / relativist position may be faced with admitting defeat in locating causal explanations. Qualitative methods might be used to study such phenomena. I do not mean to suggest that such inconsistencies would mean no objective truth existed in these phenomena. Possibly, as in chaos theory, in some behaviours, situations and organisations, the number of variables affecting a system under investigation are so numerous and complex that understanding and prediction are impossible.

There are also cases where quantitative methods of research might be of more use than qualitative methods in realist / relativist study. In systems such as unconscious reactions, where the perception of the participant is will not affect results, studying behaviour in a positivist way may provide the most useful information about the objective world. While the researcher's point of view will always be subjective, in these kinds of phenomena, at least the participant is removed from the experiment and might even be considered objective!

Methodology in realist / relativist study

That I advocate a stronger use of either positivist or interpretivist methodologies according to situation is not meant to imply that I recommend the use of purely positivist or purely interpretivist methodologies at any point. Subscribing to a relativist point of view means, for example, that I can never assume that the researcher is objective, so interpretivist ideas apply. Subscribing to a realist point of view means that I can never assume that participants have access to all the phenomena

I wish to study, so some positivist ideas should always be included in my methodology.

Looking for causal relationships and furthering understanding in a socially coloured world means that a mock-triangulation can be used to establish whether quantitatively discovered information is available to individual insight, and if qualitatively discovered information can be operationalised to give a useful perception of the objective world. However, triangulation in its traditional sense is not recommended. True triangulation assumes that both qualitative and quantitative methods can be used to locate an objective truth, and hence excludes my allowance for the possibility of unlocatable knowledge.

Methods that attempt to combine qualitative and quantitative ideas would also be very useful to me in research – for example pseudo-experimental designs where context and time are taken into account in designing studies. Guba (1985) states that researchers who attempt to use such methods tend to ignore important elements of qualitative research, such as reflexivity. Such an omission is not a necessary feature of combining realist and relativist ideas, however, but a merely a feature of some poorly thought out research strategies.

Implications

My argument has been partly geared towards the larger picture of ontological, epistemological and methodological understanding, with my own stance on these issues used as an example of how Burrell and Morgan's ideas can be differently understood. It has never been my intent to argue exclusively for a realist / relativist point of view, but rather to illustrate how such a point of view can influence a researcher's choice of methods of study.

I believe that looking at ontological and epistemological issues at an abstract level is essential for the understanding of the complex issues behind research strategies. Understanding the range of philosophical positions that can be held is itself a necessary part of the relativist viewpoint. It is entirely possible that the realist /

relativist standpoint is an entirely inaccurate understanding of the world and knowledge, so there is a strong argument for the maintenance of a variety of ontological and epistemological views within the world of research (Jackson and Carter, 1991). In fact, my discussion of Burrell and Morgan's (1979) model is intended to open up rather than reduce the number of views that might be considered valid.

My own ontological and epistemological stance undoubtedly comes with its own set of difficulties in conducting research, understanding the results obtained by research, and in applying these results to the everyday world. However, choice of methods is so tied up in this stance that selection of research strategies is simplified, rather than complicated. Once we become aware of our philosophy, any research strategy outside that philosophy seems incomprehensible. So for me, quantitative, qualitative or both is hardly a choice – my ontology and epistemology mean that my selection of a combination is a given.

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