

Realities Toolkit #12

What to do with contradictory data?

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July 2010

Introduction

This toolkit focuses on the issue of data integration within mixed methods research. The term 'mixed methods' is used here to denote research that combines qualitative and quantitative data collection and analysis in one study. One of the main issues facing many mixed methods researchers is the question of how to integrate data, with the particular problem of 'contradictory' data. Mixed methods research is perhaps particularly prone to 'contradictions' in data because of the different categories and levels of analysis, as well as contrasting explanatory logics, that are employed. This toolkit discusses different approaches to the issue of integration and 'contradictory' data.

What is your approach to integration?

How you view data and the extent to which you might find different data contradictory partly depends on your approach to and purpose behind doing mixed methods research. Therefore it is important to consider what the logic behind your use of mixed methods is. It is also worth thinking about how you view social phenomena. Are social phenomena in your mind such that one can or should find 'non-contradictory' findings?

This toolkit discusses three broad approaches to mixed methods and their implications for the issue of 'contradictory' data:

- 1) Triangulation
- 2) Complementarity
- 3) Constructing multi-dimensional accounts

Triangulation

Triangulation is perhaps the 'classic' approach to mixed methods research, following on from Norman Denzin's (1977) argument that findings from one method can be validated by using other methods. The aim of triangulation is to mix methods in order to achieve a more accurate measurement and consequently a better approximation of a social phenomenon. Further evidence is sought in order to confirm or disconfirm research results as a way of improving the validity of a study (Erzberger and Prein, 1997). The logic behind triangulation is in other words corroborative, where findings are expected to converge in order to be validated (Mason, 2006a). Under this strategy, 'contradictory' data pose a serious problem.

The allure of triangulation is understandable given that it may sound more 'scientific', but the metaphor most often used in conjunction with triangulation, that is, creating a three-dimensional representation by combining two two-dimensional images, is problematic. This is because social phenomena are not geometrical shapes or geographical co-ordinates but rather complex and processual by nature (Mason, 2006a: 8). Moreover, data can only validate each other if the different methods measure the same object, which, as we will see in the next section, is not an unproblematic assumption.

In sum, triangulation is by some seen to be a conservative approach that offers little in the way of opportunities for creativity, for example, in how researchers ask questions or seek answers to them (Mason, 2008a; Erzberger & Prein, 1997). In the following two approaches, contradictory findings are viewed somewhat differently, as a departure point for generating new theories in a creative fashion.

Complementarity

In studies that adopt an integrative (rather than corroborative) logic, the aim is to ask questions about connecting and integrated parts, segments or layers of a social phenomenon that complement rather than validate each other, rather like the pieces of a jigsaw puzzle (Mason, 2006a). Methods are chosen on the basis of their ability to answer a specific part of the problem or because their combination might give a better sense of the whole. The assumption behind this approach is that because qualitative and quantitative approaches address different levels of inquiry, any mixed methods study should play to their different strengths.

Moreover, the complementarity approach assumes that the different methods do not investigate the same object. In other words, methods do not provide representations but rather constructions of social reality. This is because the images social scientists produce are dependent on the techniques they employ. Consequently, combining methods cannot be used for cross-validation or triangulation purposes because they cannot produce one picture of reality. For example in a study of burnout experienced by nurses, the qualitative element might examine burn-out as a lived experience, while the quantitative study tries to develop external measures for burnout (Matthews et al., 1993). The relationship between the different findings is theoretical rather than empirical; in other words, the relationship between them is not necessarily apparent but has to be deduced from theory. In such studies, there is usually from the start some understanding (even though it may often remain implicit) of the way in which the different datasets can contribute to the whole story (Mason, 2006a).

What if the explanations offered by the different methods are inconsistent with each other? Under this strategy, such inconsistencies might still be seen as problematic, but because the different findings are seen to be more independent of each other than in triangulation, there is more scope for such findings to co-exist. A distinction can be drawn between true contradictions that cannot exist and be true simultaneously, and conflicts that do not necessarily refute each other (Slonim-Nevo & Slonim, 2009). Such conflicts are merely the outcome of the fact that social reality is complex and can at times be conflicting. With conflicts, there is no push to determine which finding is more 'correct' than the other; each set of findings has to be interpreted in context and as representing different viewpoints on the same issue/phenomenon. This view is taken a step further in the last approach discussed below.

Constructing multi-dimensional explanations

According to the third approach, social phenomena are multi-dimensional and because of this, they should not be studied along a single dimension alone (Mason, 2006b: 10). This strategy allows researchers to ask distinctively different but intersecting questions about social phenomena, as well as to conceptualise what they are researching and what counts as knowledge and evidence in different ways. If researchers who hold such different views engage in dialogue, this can have a transformative effect on them, for example in terms of how they ask questions or where they look for answers.

Mason (2006a: 9) offers the study of emotions as an example. It is customary to leave the study of 'inner psyche' to psychologists, while sociologists focus on the social construction of emotions, and anthropologists examine rules and rituals of emotional display, while health scientists focus on emotional health. But what if these different researchers came together to study emotions in a collective manner? The aim would not be integration of data into one whole, but rather an understanding of emotional life as multidimensional. In such multi-dimensional explanations, the different dimensions might intersect, but they might also exist in tension with each other. This tension (which could perhaps be interpreted as 'contradiction') is however not necessarily a bad thing, because it can aid the construction of 'dialogic' explanations that capture the dynamic relation between more than one way of seeing (Mason, 2006a: 10).

Integration of data?

Fundamental issues such as those considered above will partly shape how you approach the linking of data analytically. In triangulation and complementarity, the different methods are used to provide data about a specific part of a bigger picture, and the aim is to be able to gain a better understanding of the bigger picture from these different angles. The assumption is that the different parts can be consolidated or integrated in order to produce a fuller picture (Mason, 2006b: 20). This requires one overarching theory or set of questions, and a coherent world view of how the picture can be conceptualized, or the pieces assembled. But these approaches can run into problems because the different methods do not necessarily produce consistent data, nor can they always easily be part of one worldview.

In multi-dimensional explanations, the aim is not to produce a tidy picture, but to allow for the messiness and tensions that exist in social reality. Mason (2006b: 20) would rather talk of 'linking data' or 'meshing methods' than of integration:

'Explanations do not have to be internally consensual and neatly consistent to have meaning and to have the capacity to explain. Indeed, if the social world is multi-dimensional, then surely our explanations need to be likewise? I want to suggest that we should develop 'dialogic' explanations which are 'multi-nodal'. By 'multi-nodal' I mean that the explaining that is done involves different axes and dimensions of social experience. By 'dialogic' I mean that the ways in which these axes and dimensions are conceptualized and seen to relate or intersect can be explained in more than one way, depending upon the questions that are being asked and the theoretical orientations underlying those questions.' (Mason, 2006b: 20)

References

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See also

May, V. and Burke, H (2010) Realities Toolkit #11: 'Practical considerations for leading and working on a mixed method project'. Available from www.manchester.ac.uk/realities/resources/toolkits.

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