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Six strategies for mixing methods and linking data in social science research

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Six strategies for mixing methods and linking data in social science research

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Introduction

This paper is written as a practical and accessible guide to some key issues in mixed methods research. It explores six broad strategies that can underpin the mixing of methods and linking of different forms of data, be they qualitative, quantitative, or spanning this divide. It does this in a context where mixing methods has come to be seen as a good thing, and where research funders are increasingly thought to look favourably upon research proposals involving more than one method for generating and analysing data. Yet mixing methods for no good reason other than the sake of it can produce disjointed and unfocused research, and can severely test the capabilities of researchers. Researchers engaging in mixed methods research need to have a clear sense of the logic and purpose of their approach and of what they are trying to achieve, because this ultimately must underpin their practical strategy not only for choosing and deploying a particular mix of methods, but crucially also for linking their data analytically. The paper outlines challenges and opportunities that each of the six strategies brings for mixed methods practice and analysis, giving each a verdict.

1. Mixing methods for a close-up illustration of a bigger picture, or for background



Probably the most commonly used logic in mixing methods is where researchers wish to add some breadth or depth to their analysis. This is often done by researchers who have primarily either a quantitative or qualitative orientation, but also a sense that their methods and data are partial in some respect. For those with a quantitative orientation, the 'big picture' gained through quantitative means may be rigorous, and based on representative or statistical forms of sampling and analysis, yet also feel superficial or lacking in 'real life' resonance. From that perspective, the use of selected qualitative approaches – for example in the form of in-depth case studies – can be illustrative and evocative, and provides a more close-up view. Conversely, for a researcher with a primarily qualitative orientation, which focuses on social processes in rich and proximate detail, the inclusion of some background quantitative material, perhaps in the form of local or national demographic data, can help in making the research part of a bigger set of observations.

= A rhetorical logic

The logic of this kind of approach is inherently rhetorical – that is to say, from whatever their starting point, the researcher uses the other form of data to *embellish* their analysis, but it is not really considered to be a *necessary* part of the argument. Essentially, the additional data is just that – a supplement – and the explanatory logic itself is either qualitative or quantitative.

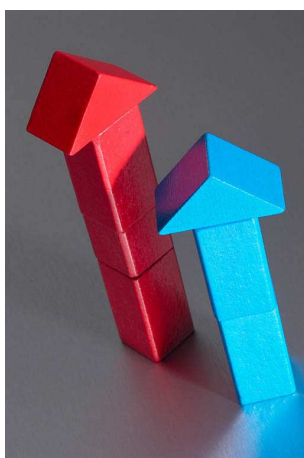
Challenges and opportunities

The ambitions of this kind of approach are, methodologically speaking, extremely modest. There is no real attempt at multi-method explanation or dialogue, and the research design and strategy is governed by an either/or, 'quant-or-quali', methodological logic. For that reason, this kind of approach raises few challenges. It is not difficult for a skilled quantitative researcher to work out for themselves how to include a few qualitative examples, or for a qualitative researcher to include a bit of quantitative background taken from published sources for example. Neither has to get to grips with how exactly one might sample, or generate data systematically and creatively, from a perspective other than the one with which they are familiar. Neither has to work out what a mixed methods explanation or interpretation might look like.

But of course the opportunities are just as limited as are the risks, since this approach does not involve considering what kinds of questions could be pursued were the researcher to use each form of method to its best advantage, rather than as embellishment. This kind of approach also has the tendency to polarise quantitative versus qualitative methods, without introducing the researcher to the exciting complexities of differences within those broad categories.

**VERDICT- MIXING METHODS WITH A RHETORICAL LOGIC:
EASY TO DO, LOW RISK, BUT DOESN'T TAKE YOU VERY FAR**

2. Mixing methods to ask and answer differently conceived or separate questions



Sometimes researchers will feel that there are different sets of research questions which, although broadly related to the same overall topic, do not have a particular connection analytically speaking. So, for example, a study of

human-animal interactions might look at farming, the meat industry, hunting, zoo cultures, family pets, the role of animals in literature and the media and so on, but might not want to make any particular argument about whether and how these different domains are connected. Studies like this can be constructed as multi-part projects, often although not necessarily conducted by teams where different members have responsibility for the different parts. Here, different approaches and methodologies are necessarily present overall, but are by design not drawn into any form of integrative whole or overall argument.

= A parallel logic

This kind of approach is governed by a parallel logic. It is different from the rhetorical logic identified above, because any one approach is not necessarily subsumed within the broad strategy of another. Instead, each part of the study, or each mini-study, has its own logic of design, data generation, analysis and explanation, and these run in parallel. Of course these mini-studies need not be simply mono-methods ones, but this approach overall is essentially based on the idea of co-presence of multiple methods, rather than their integration.

Challenges and opportunities

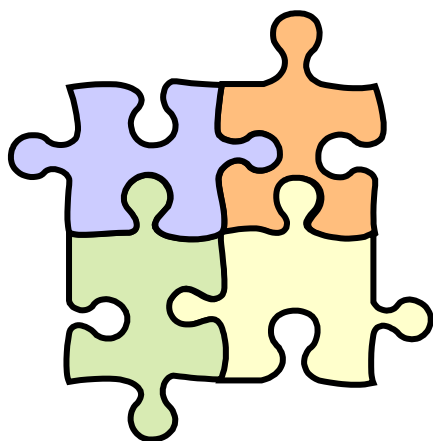
Once again, the challenges of this kind of approach (for mixed methods working at least) are few, because although multiple methods may be used to their best advantage, the question of how one might mix them or link data and analysis is ultimately ducked.

The opportunities extend a little further than with the 'rhetorical' logic outlined above though, both because there is no necessary squashing of different approaches into one dominant explanatory 'quant-or-quali' frame (which will not fit all), and because if each mini-study is conducted well in its own terms, there may be considerable opportunities for secondary analysis that cross-cuts all of them at a later stage. At that point, one can imagine some creative opportunities for linking data and explanation. In a multi-part or multi-question study of this kind, there is also some potential for the sparking of ideas across methodological boundaries and across the mini-projects, if the team members are able to and prepared to work at this.

VERDICT - MIXING METHODS WITH A PARALLEL LOGIC:

FAIRLY EASY TO DO, MEDIUM RISK, BUT LIMITED BENEFITS, ALTHOUGH SOME INTERESTING POTENTIAL FOR EXPLOITING THE MULTIPLE METHODS USED, ESPECIALLY AT A LATER STAGE

3. Mixing methods to ask questions about connecting parts, segments or layers of a social whole



Some studies are designed with several or multiple components as with the previous example, but also with a clear sense that these deal with integrated parts of a whole. In this approach, different methods may be deployed because each is felt to be the best suited to its own specific part of the problem being researched, and because in combination they give a better sense of the whole because they can address a meaningful group of questions, eg the four key pieces in the jigsaw or the five layers of the wedding cake. To use an example, if a project was concerned with *how and under what conditions children learn 'successfully'*, one might use, in strategic combination:

- a secondary analysis of national or local quantitative data on educational outcomes for children against different demographic and socio-economic criteria
- statistical modelling of outcome and contextual data to explore links between observed outcomes and a range of contextual criteria
- analysis of Local Education Authority and school documentary data to trace philosophies, policies, practices
- school based cultural ethnographies at specially selected schools
- interviews with 'key informants' in and outside school
- outside-school (eg home, social milieu) based qualitative interviews, or home ethnographies
- children's video diaries, weblogs, and communication practices

There is, of course, a huge range of possibilities that one could line up in pursuit of this (rather controversial) research question, but the point with this approach is that each method would be intended to produce data on a specific part of a whole.

= An integrative logic

Clearly, this approach uses an integrative logic. This logic is usually there from the start of the study, sometimes very explicitly, sometimes less so, in the assumptions about what part the different types or layers of data can play in the overall story. In the example above, this implies a theory of the spheres in which successful learning is considered to be enacted, achieved or facilitated, and might involve ideas about which spheres are dominant or determining. Often,

though, the precise logic that underpins this goes unspoken in research designs and by research teams who see it as self evident. But it is important for researchers to recognise that their assumptions about how levels or layers of data fit together are the result of *theories* or models of integration, and that other theories are always possible. Indeed, research team members can hold differing views of this beneath a veneer of a consensual integrative logic.

Challenges and opportunities

This approach tries to tackle the question of mixing or linking data head on, rather than to duck or avoid it as the first two approaches tend to do. Consequently, it is a great deal more challenging to put into practice, not least in terms of the range of researcher skills that are required. This approach really does call for an explicit and considered theory of data integration. But problems can arise because methods, approaches, and the theories underpinning these, do not always add up to a consensual take on the social world, or what its constituent parts might be, nor how they fit together. Differences can become visible early on in difficulties in formulating the research questions themselves (including my controversial example above which fits better with some research traditions than others). More difficulties can arise when an integrative analysis of the different forms of data is attempted. In interdisciplinary team based research, team members sometimes find it easier and more productive to opt for a pragmatic approach which does not engage too closely with theory, epistemology and ontology¹, for fear of unearthing irreconcilable differences. But this tends to produce research that is not well or systematically connected to theory, or can lead to fractured and disjointed explanations, or even an unintended recourse to a parallel logic. In some research projects, the choice of integrative model that prevails may be the result of a power struggle, for example between unequal research partners, or between methods favoured in powerful and less powerful disciplines, or those favoured by the major research funders, rather than having a great deal to do with a compelling intellectual logic.

In my view, the greatest opportunities for mixing methods using an integrative logic are in projects that are approached from one agreed upon disciplinary or theoretical orientation, or from orientations that are clearly complementary. This then provides the model for integration of data, and for theorising the 'whole' that is being researched. This limits the opportunities to use methods and approaches to their best advantage in their own terms though.

VERDICT – MIXING METHODS WITH AN INTEGRATIVE LOGIC:

DIFFICULT TO DO, BENEFITS ARE DUBIOUS IF NOT DONE EFFECTIVELY, BUT CAN WORK WELL IF THERE IS A CLEAR AND CONSENSUAL MODEL FOR INTEGRATING DATA.

¹ Ontology means a theory of the nature and essence of things – ie what things are. Epistemology means a theory of knowledge' – ie how things can be known.

4. Mixing methods to achieve accurate measurement through triangulation



Many studies seeking to integrate data and analysis will use the term 'triangulation', and this has unfortunately become rather a limp and catch-all justification for the use of more than one method in a study. Here, for simplicity and clarity, I am using it to refer specifically to studies where a social phenomenon is 'measured' from two or more different vantage points, in order to pinpoint the phenomenon, or to improve, test or validate the accuracy of the observation. It is thus a rather narrow and specific version of the integrative logic discussed above.

= A corroborative logic

This version of triangulation draws on a corroborative logic, where different forms of data and method are used to corroborate what they are measuring, and sometimes to corroborate each other.

Challenges and opportunities

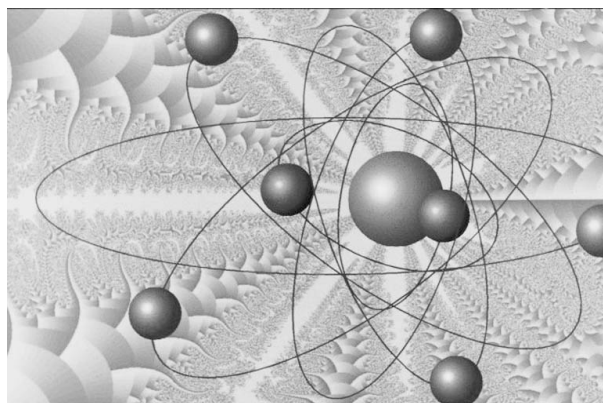
The challenges are many, partly because of the emphasis on precision in measurement that does not fit easily with the complexity and processual nature of many modes of social science explanation, but also because different methods and approaches rarely corroborate each other straightforwardly. The risk is that triangulation, because there is a technical term for it, can sound more 'scientific' than it is.

The opportunities are limited because the researcher's ways of seeing and of asking questions is ultimately driven by a conservative logic that fits better with pinpointing geographical co-ordinates than with explaining social phenomena.

VERDICT – MIXING METHODS WITH A CORROBORATIVE LOGIC:

DIFFICULT, LIMITED BENEFITS, BECAUSE DIFFERENT METHODS AND APPROACHES RARELY CORROBORATE EACH OTHER STRAIGHTFORWARDLY

5. Mixing methods to ask distinctive but intersecting questions



It would be a pity if we were to conclude that mixing methods is just too problematic because a parallel logic is ultimately not very satisfying, and because a genuinely corroborative logic is questionable. Different methods and approaches have the potential to enable researchers to ask contrasting and distinctive questions about the social world, and to conceptualise what they are researching, and what would 'count' as knowledge or evidence about it, in different ways. Those differences – and relationships between them – are potentially rather exciting – perhaps *especially* where they express differences between ontologies, epistemologies, and disciplinary fields of relevance. It is possible to envisage groups of questions about the social world which call for some kind of intersection, or interplay, of distinctive ways of seeing and, and which do not involve the squashing of these into one dominant methodological approach and one model of integration. In the process, the field of enquiry itself, and what we think is the problem that we are researching, are likely to be redefined. Take for example, the study of emotional and personal life. Instead of leaving questions about 'inner psyche' to psychologists, and those about 'social construction of emotions' to sociologists, and those about 'rules and rituals of emotional display' to anthropologists, and those about the 'commodification and marketisation of emotion' to economists, and those about 'emotional health' to health scientists, and so on - how much more exciting to pursue the differently conceived questions and methods for exploring them in a *collective* (in contrast to *integrated*) manner? This involves recognising that the social world and the issues and problems we seek to research are multi-dimensional, and that different dimensions might exist in an uneasy or messy tension, rather than being neatly integrated within one plane or dimension (like the wedding cake or the jigsaw puzzle). The different ways of perceiving and interrogating the social world represented in different methods are themselves part of that multidimensionality. So, for example, emotional life is quite possibly about these and other different ways of understanding it, and these may not integrate tidily into a predominantly psychological, or sociological, or some other disciplinary explanation, nor sit solely within any one of those disciplinary fields of relevance.

= A multi-dimensional logic

The argument is that different methods and approaches have distinctive strengths and potential which, *if allowed to flourish*, can help us to understand

multi-dimensionality and social complexity. The logic is clearly distinct from an integrated or corroborative one, but is also different from the parallel logic outlined above. This is because there is some sense of 'intersection' in the approaches. Ideally, this involves a *creative tension* between the different methods and approaches, which depends upon a dialogue between them. It means that instead of ultimately producing one integrated account or explanation of whatever is being researched (integrative logic), or a series of parallel accounts (parallel logic), one imagines instead 'multi-nodal' and 'dialogic' explanations which are based on the dynamic relation of more than one way of seeing and researching. This requires that researchers factor into their accounts the different ways of asking questions and of answering them.

Challenges and opportunities

This kind of approach is hugely challenging because by definition it pushes at the boundaries of social science philosophy, knowledge and practice. The approach is at risk of fracturing into a parallel logic, or organising itself too neatly into an integrated one. 'Creative tensions' are not easy to achieve, and researchers need to feel they are sharing ideas and differences in a 'safe environment', where they can take intellectual risks and be interested in alternative approaches without fear of immediate reprisal (for having sold out), contradiction (by those who favour alternative approaches) or annihilation. It requires considerable skill and commitment from researchers and teams, who need to have the capacity and inclination to see beyond disciplinary, epistemological and ontological distinctions, without simply wishing to critique all others from the perspective of only one, or to subsume all others into one. Yet it requires that the distinctive nature of different approaches is respected and allowed to flourish, rather than reducing all to a bland lowest common denominator which is assumed to be 'interdisciplinarity'. In this sense, it also contains within its own assumptions a particular theory or philosophy of social science, which in turn provides a model for how methods can be mixed. But instead of a theory of integration and of a social world that contains interlocking parts, this is a theory of multi-dimensionality (and of course it is equally open to critique and question).

On the other hand, the opportunities, for harnessing creative tensions and building on rather than ironing out the distinctive strengths of different approaches, are substantial. Such an approach, like no other, can facilitate the researcher in asking new kinds of questions, 'thinking outside the box', developing multi-dimensional ways of understanding, and deploying a creative range of methods in the process.

VERDICT – MIXING METHODS WITH A MULTI-DIMENSIONAL LOGIC:

VERY DIFFICULT TO DO, BUT WITH SIGNIFICANT PROMISE FOR ENHANCING SOCIAL SCIENCE EXPLANATION

6. Mixing methods opportunistically



All of the previous examples have implied that researchers have some form of control over the research design, process and shape and form of data emerging from a mixed methods study. Of course this is not always the case, and sometimes mixing methods and data can become possible more by accident than design, especially where existing data sets become available unexpectedly or serendipitously, or where access is available to a potential data source.

= No intrinsic logic

Challenges and opportunities

Opportunistic mixing of methods and approaches is of course not a strategy, and has no single intrinsic logic. The key challenge for researchers is to find a logic that provides an effective way of proceeding, as soon as possible, and then to be able to put it into practice in circumstances where they may have limited control. But significant opportunities can arise in this kind of serendipitous way, and researchers should think twice before foregoing potentially interesting or important data, just as they should pause before grabbing an opportunity that may turn out to be not very fruitful.

VERDICT – MIXING METHODS OPPORTUNISTICALLY:

CAN BE DIFFICULT TO FIND A LOGIC AND PUT IT INTO PRACTICE, BUT CAN OFFER GOOD OPPORTUNITIES

Conclusion

The practical and intellectual tasks of analysing and linking data derived from mixed methods research are varied in nature, and depend crucially upon what strategy the researcher or team is seeking to adopt. I have indicated what I see as some of the key challenges and opportunities raised by the different strategies I have discussed. However, these are in turn influenced by practical, political and resource issues, and I have hinted at some of these already. These will establish certain constraints and contexts as well as creating inequalities and differences between researchers and approaches. These include, for example:

- power, status and inequalities within and between teams, and for individual researchers, and between disciplines and fields of interest. We know that not all methods and approaches are universally perceived as

being equally valid, rigorous or meaningful, and that research involves power relations and struggles (often between people with very different kinds of employment contract) and is conducted in different political and economic contexts.

- constraints and opportunities of research funding; responsibilities to and expectations of funders and other stakeholders
- access to and ownership of data; opportunities for collaboration, for sole working, for authorship.
- spread of skills and competencies; time, resources and capacity to learn new skills.
- possibilities for strategic planning of outputs, eg for different purposes and audiences.

Taken together, these represent a kind of political economy-cum-social relations of social research, and mixed methods researchers have to negotiate and navigate their way through this just as any researcher does. However, for those who are endeavouring to mix methods, some of these concerns are raised in particularly sharp form, and the strategies for mixing methods that emerge will be possibly as much to do with how these negotiations and struggles play out, as with the intellectual mission that any one researcher had in mind at the start. This is not to say that mixing methods cannot, ultimately, be strategic (in intellectual terms) but rather that these are the real life conditions under which people actually go about working out their strategies. Practically speaking, it is just as important to recognise how these factors play out in one's own real life research, as it is to be clear about a desired strategy for mixing methods – since these are inextricably related and mixed methods research practice will involve dealing with both in tandem.

Suggestions for Further Reading

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