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Mixing Methods: The Entry of Qualitative and Quantitative Approaches into the Research Process

Julia Brannen

Qualitative and quantitative research are often presented as two fundamentally different paradigms through which we study the social world. These paradigms act as lightning conductors to which sets of epistemological assumptions, theoretical approaches and methods are attracted. Each is seen to be incompatible with the other. These paradigmatic claims have a tendency to resurface from time to time, manifesting themselves in the effects of different cultural traditions upon intellectual styles of research. There are pressures to view research in terms of this divide but perhaps more pressures to ignore such a divide.

In this paper I examine how qualitative and quantitative approaches are in practice woven into the research process. In doing so I discuss the phasing of the research process and the different considerations which apply in different phases. A distinction is made between the context of enquiry or research design phase and the context of justification where data are analysed and interpreted. Part of the research process that is also considered here and is often ignored in the literature concerns contextualization, an important phase particularly in cross-national research.

The Case for Separation and the Case for Convergence

The case for separate paradigms is that qualitative and quantitative researchers hold different epistemological assumptions, belong to different research cultures and have different researcher biographies that work against convergence (Brannen, 1992). Indeed qualitative researchers are embracing even greater reflexivity, for example...
taking account of the influence of the researcher in the research encounter, finding new ways of relating the voices of marginal groups to academic knowledge and researcher interpretation (see for example articles in this journal and Ribbens & Edwards, 1998). On the quantitative front researchers are constantly urged by bodies such as the UK’s Economic and Social Research Council to develop their skills base in order to keep up with developments elsewhere (notably the US); this may serve to maintain the barricades between qualitative and quantitative research through ever greater sophistication and complexity of statistical techniques.

While researchers rationalize their interpretive frameworks in terms of fundamental distinctions of ontology, epistemology and theory, they develop over time habits and dispositions as well as particular expertise and preferences for particular approaches and may lack the time and inclination to extend skills and interests in other directions and across the qualitative/quantitative divide. Research practice is also shaped by the research environment—by the funds available for a research project and by the short-term contracts of many researchers in the UK.

While research practices diverge, there is considerable pressure for convergence at this present time. Externally, there is increased demand for research to inform policy and for practical rather than scientific research, again a trend that may work against specialization in either qualitative or quantitative research (see Hammersley, 2000). The importance placed upon particular types of research evidence is subject to changes in political climates and persuasions. As Janet Finch argued in the 1980s, British government has long preferred quantitative evidence in contrast to more pluralistic methodological preferences of US governments in the same period (Finch, 1986). Currently, there are external pressures, from national and EU funders, for researchers to inform policy and therefore to disseminate in lay language. There is a whole industry in Britain and the US, and increasingly Europe, devoted to evaluation of policy that utilizes qualitative as well as quantitative methods (Ritchie & Lewis, 2003). In the US, the demand for qualitative research has been caught up in the wider politics of interest groups who have argued that the benefits of government programmes to the poor did not show up in much quantitative work (Ong, 1999). Many of these trends suggest greater rather than less convergence between approaches.

Both externally and internally, the pressures of research markets and the marketization of universities in the 1990s and twenty-first century are leading to the institutionalization of research training. The arrival of a skills-based economy in which training has superseded notions of apprenticeship is as influential in research as elsewhere in the labour market. In Britain, in the past ten to fifteen years, we have seen a steady expansion in masters’ degrees courses in research methods and in other courses dedicated to research training. Today’s students on masters courses are typically introduced to both qualitative and quantitative methods, whereas in the past they were not exposed to such a wide range of methods.

Pressure from users and the enhanced diversity of skills influence the type of research that is done as well as the questions posed, and how they are addressed. They also affect how research is written up for different audiences or ‘user’ groups.
Researchers today are required to communicate in ‘double speak’: in the specialized languages that define their ‘fields’ (as opposed to disciplines) (Bernstein, 2000) and in a generic, popular language that addresses ‘research users’. Such emphasis upon dissemination may have the effect of increasing the importance of research which takes an action perspective, that is draws upon actors’ perspectives both in the interpretation and in the presentation of the data. This is not to suggest, however, that quantitative research is being displaced.

However, responding to pressures from funders and the demand to disseminate and to do so in particular kinds of ways can result in epistemological issues vanishing from view in the way data analysis is discussed, while methodological issues may be reduced to skills training. Lack of space in the article format also can mean that methodological issues are relegated to footnotes, while in books they appear in appendices or end notes. These pressures have on the other hand helped to generate an increase in journals and books devoted to methodological issues.

Yet while I have made a case for greater pressure to work qualitatively and quantitatively, it is also possible to argue that the continuing existence of the separate paradigms approach is a healthy sign that such matters are still a subject for debate. Having reviewed many journal articles on methodology in recent years, I would suggest that there is strong support for working both qualitatively and quantitatively. In the current trend towards evidence-based practice and the systematic review of social science research, research that combines qualitative and quantitative methods needs particular attention. The task for reviewers is a hard one if the published methodological evidence for either approach is wanting.

**Working Qualitatively and Quantitatively**

I do not propose in this paper to demonstrate how the distinctions that are typically said to distinguish between qualitative and quantitative research break down under scrutiny (see, for example, Bryman 1988, 2001; and Hammersley, 1992, for a discussion of this). I will simply assert that there are more overlaps than differences between these claims (Hammersley, 1992). For example, the claims that qualitative research uses words while quantitative research uses numbers is overly simplistic. A further claim that qualitative studies focus on meanings while quantitative research is concerned with behaviour is also not fully supported since both may be concerned with people’s views and actions. The association of qualitative research with an inductive logic of enquiry and quantitative research with hypothetic-deduction can often be reversed in practice; both types of research may employ both forms of logic. That qualitative research lacks quantitative research’s power to generalize is moreover only true if generalizability is taken to refer only to statistical inference, that is when the findings of a research sample are generalized to the parent population. Qualitative findings may be generalized in a different sense; they may be generalized to other settings or contexts or they may involve theoretical generalization, where findings are extrapolated in relation to their theoretical application (Ritchie & Lewis, 2003).
The Context of Enquiry

I want to focus upon the two contexts in the research process in which methodological considerations come to the fore. First, the context of enquiry or the research design phase. At this phase of the research process we wrestle with such fundamental methodological questions as: ‘How important is it to be able to estimate the frequency of a defined social phenomenon according to other defined variables?’ ‘How important is it to generalize those frequencies and their associations to a parent population?’ ‘Do we want to test a hypothesis and/or generate new hypotheses?’ ‘Do we want to explore what people think about a particular social phenomenon and how those perceptions link to other perspectives and informant characteristics?’ Or, more mundanely, in terms of sampling, ‘Do we want to use one field method to find a particular group and to use a different field method to study a subset of that group?’ We are likely in many research projects to ask a number of questions each of which may have different methodological implications. The kinds of questions we pose lead therefore not only to the choice of method but, increasingly commonly, to a complex of methods.

Context of Justification

Our methods and their assumptions are revisited in a second context—what is known as the context of justification where the data are analysed and interpreted. As some would argue, in the context of justification the resulting data sets cannot be linked together unproblematically (Smith & Heshusius, 1986). For it is at this phase that ontological, epistemological and theoretical issues raise their heads in the encounter with data. In the cold light of data analysis we are forced to reflect on different kinds of ‘truth’ or ‘validity’ and to take account of the fact that our different types of data are constituted by the assumptions and methods that elicit them.

Thus we cannot unproblematically assume that data from different methods will corroborate one another as is implied in the strategy of triangulation—that is where the choice of methods is intended to investigate a single social phenomenon from different vantage points (Denzin, 1970). Data collected from different methods cannot be simply added together to produce a unitary or rounded reality. When we combine methods, there are a number of possible outcomes; corroboration of results is only one of at least four possibilities (Morgan, 1998, cited in Bryman, 2001; Hammersley, 1996):

- **Corroboration**: The ‘same results’ are derived from both qualitative and quantitative methods.
- **Elaboration**: The qualitative data analysis exemplifies how the quantitative findings apply in particular cases.
- **Complementarity**: The qualitative and quantitative results differ but together they generate insights.
- **Contradiction**: Where qualitative data and quantitative findings conflict.

What I want to suggest is that working qualitatively and quantitatively involves considerations at each phase of research enquiry. In other words, when researchers...
work with different types of data within the same research project, the way they use these data will vary according to the phase of the research in which the researcher brings the different data sets into play. Bryman distinguishes between the ways in which qualitative and quantitative research are combined in terms of: (a) the importance given to qualitative and quantitative approaches in the research investigation and (b) the time ordering or sequencing of the approaches. However, as he suggests, such distinctions are not always possible in practice because they rely on being able to identify the dominance of one approach (Bryman, 2001, p. 448).

In the rest of the paper I give some examples of the ways qualitative and quantitative approaches enter the research process with particular attention to the context of enquiry and the context of justification, drawing upon studies from my own research biography.

**Working Qualitatively and Quantitatively in Practice**

*The Research Design Phase*

The example I give here is where two data sets are clearly specified in the research design—as distinct and separate parts of a study. The study concerned children’s concepts of care and their contribution to family life (Brannen, Heptinstall, & Bhopal, 2000), which was carried out in two London boroughs (Table 1). The first phase was a self-completion questionnaire survey of school-based populations—of around 1,000 children aged 11–12. The second phase involved a sub-sample drawn from the survey of groups of children and their parents living in different types of household (63 households). This second phase employed a semi-structured interview schedule.

<table>
<thead>
<tr>
<th>Research topic</th>
<th>Research methods</th>
<th>Phase of research when a second method introduced</th>
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<tbody>
<tr>
<td>1. <strong>A cross-sectional study of children’s concepts of care and experience of different kinds of family structures conducted in 2 Local Authorities</strong></td>
<td>A schools-based survey of 11–12 year olds; an interview study with sub-groups of children in different family types drawn from the survey</td>
<td><strong>Research design phase</strong>: survey provides extensive data and contextualizes interview study; survey provides samples for interview study</td>
</tr>
<tr>
<td>2. <strong>A longitudinal study of first-time mothers returning to work after maternity leave conducted in Greater London</strong></td>
<td>An interview study of 256 mothers interviewed on four occasions including structured questions and an in-depth interviewing approach</td>
<td><strong>Fieldwork phase</strong>: qualitative element added to interview to provide holistic framework for understanding meanings and actions and to provide opportunity for narratives grounded in women’s experiences</td>
</tr>
<tr>
<td>3. <strong>A cross-sectional study of young people’s views of the future conducted in the UK, Portugal, Ireland, Sweden and Norway</strong></td>
<td>Focus groups and interviews with young people (selected on basis of gender, education/training and occupational status) and national quantitative data</td>
<td><strong>Analysis phase</strong>: national quantitative data assists interpretation of qualitative data</td>
</tr>
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Each phase had a particular aim and addressed different research questions and concerns. Moreover it was also the case that the second (qualitative) phase depended upon the first (quantitative) phase: The interview cases were embedded within school-based surveys located in particular social milieux which we also sought to describe. The surveys therefore provided contextual information about the populations of children who had been selected. Where a study is being conducted with a two-stage design, the contextualization provided in the first stage can be very helpful.

The survey provided a sampling frame for the interview studies conducted with children and their parents in different types of family structure. Gaining access to children via schools was essential to reaching particular family sub-groups for the interview study. (The questionnaires were not anonymized but contained codes linked to children’s names; this enabled us later to identify and contact the groups we wished to select for the interviews.) Access required careful negotiation with schools but also some reciprocity on the researchers’ part. By providing schools with quantitative data drawn from the questionnaire survey phase relating to each school, we hoped to gain access to the qualitative sample. The questionnaire surveys were therefore designed with this additional purpose in mind.

The case to be made for attaching qualitative sub-samples to statistically derived samples such as national cohort studies is a further variant of mixed method designs. Such designs may benefit quantitative researchers through achieving a better handle upon the meanings of underlying statistical associations, while it gives qualitative researchers the chance to select particular cases, to draw upon contextual information from the wider study and to test hypotheses on large, statistically representative samples (Thompson, 2004).

The Fieldwork Phase

Different research methods may be incorporated during the fieldwork phase rather than in the design phase, with one method encompassing more than one type of approach. The exemplar study of the latter concerns a longitudinal study of women’s return to employment following maternity leave carried out during the 1980s (Brannen & Moss, 1991) (Table 1). The study was initially conceptualized in quantitative terms to examine the ‘effects’ of maternal employment upon women and children. The impetus for the methodological changes we made was both theoretical and political. The study stretched over a six-year period allowing considerable scope in time and material resource terms for the development of concepts and methodologies that were not articulated in the original research proposal. It was carried out in the 1980s, a period when funders were more generous in terms of project length. The study was moreover funded by the UK’s Department of Health, which provided considerable support to researchers for methodological development.

In this study, an important conceptual shift took place, away from a focus upon outcomes and to a focus upon meaning and upon the household: how mothers made sense of their situations and responsibilities and the ways in which they and their households (the children’s fathers) actively organized and construed employment and
parenthood. This change in conceptual perspective translated into a change in the study’s method of interviewing, with a new set of aims that underpinned the collection of qualitative as well as quantitative data. The result was an interview schedule that combined structured questions (the responses to which were categorized according to predefined codes) with open-ended questions giving scope for probing (responses were transcribed and analysed qualitatively). We remained committed to collecting the structured data originally promised but required the interviewers to collect such data while seeming to adopt a flexible, in-depth mode of interviewing. Indeed this combined interviewing approach was so successful that, in one of the later waves of the longitudinal study when, for resource reasons, we decided to collect only quantitative data, we found the interviewees reluctant to comply; they continued to respond in the way they had done in the earlier semi-structured interviews.

These changes were well made in that they represented the experiences of the mothers in all their complexity and ambiguity. The return to full-time employment in children’s early years was unusual in Britain in the early 1980s, with the dominant ideology still favouring full-time motherhood (Brannen & Moss, 1991). Many mothers therefore experienced ambivalent feelings about returning to work in that context as well as being subject to the conflicting practical demands of home and work. The development of a methodology that allowed for the expression of contradictory views and feelings was therefore an important development in this study: The responses women gave to single closed questions differed from narratives embedded in their experiences. These different types of data illuminated moreover broader theoretical concerns and served to confront the contradictions in, and to highlight, the fragmented and multifaceted nature of human consciousness. We wrote about ‘the inter-penetration of ideology and practice … the mechanisms by which women reproduce and integrate contradictory elements of their beliefs, actions and the situations in which they find themselves … beliefs and practices … [which are] part and parcel of larger ideological debates concerning gender roles and the practice of everyday life’ (p. 7).

Attending to how particular findings are generated by different methods is therefore a fruitful strategy in making sense of data. Another example from this study concerns the sharing of childcare in the household. We noted how women often retracted negative comments about their partners or balanced them with commendations in response to direct questions. We wrote: ‘Examination of the qualitative analysis of women’s comments suggested a more complex conclusion. In many cases a good deal of criticism or ambivalence (about husbands) was expressed, especially when women recounted particular incidents. Critical comments, however, were often retracted or qualified in response to direct global questions concerning satisfaction with husbands’ participation … the strategy [we] adopted was to examine the contexts in which women’s responses were located, together with a content analysis of responses. In this way the contradictions were confronted, and the processes identified by which dissatisfaction was played down or explained away’ (Brannen & Moss, 1991, p. 20).

In writing up the study data, we commented upon different ways of combining qualitative and quantitative data. In general we rarely sought to corroborate qualitative results through reference to the quantitative data. Rather we analysed the data sets in
relation to the particular research questions underpinning each, while also being attentive to the context of informants’ responses, namely the questions the interviewers posed to them. Typically we found that the two types of data analysis were broadly complementary, providing different kinds of insights into the different aspects of the social phenomena which constituted our field of interest.

Such a developmental approach had consequences for a research project’s resources. An organic interviewing approach was employed, requiring increased commitment and the development of new skills; the interviews took longer, requiring extensive probing and greater flexibility, concentration and listening skills than originally envisaged in the research proposal. It had data processing consequences and more time and involvement from the senior members of the team. There were other tensions too in the analysis phase namely between carrying out an analysis across a large number of cases and carrying out a qualitative, in-depth analysis of a smaller number of selected cases (Brannen & Moss, 1991). In Britain’s increasingly marketized research world, such an evolutionary approach to research would be unlikely. However, in so far as research funders aim to encourage capacity building among researchers, allowing for a developmental approach within a project’s timetable could be one way whereby researchers build up a broad spectrum of methodological expertise.

Interpretation and Contextualization

The third phase of the research process in which another type of data may be introduced is the phase of interpretation and contextualization of the findings. Drawing upon data across the qualitative/quantitative spectrum can take place at all phases of the research process: shaping the concepts and ideas at the start of the enquiry and influencing the process of analysis, as well as occurring at the later stage when the researcher draws conclusions.

Contextualization is particularly important in cross-national research. My example here is from a study of young people’s views of their future work–family lives, funded by the European Union and carried out in five countries (Brannen, Nilsen, Lewis, & Smithson, 2002) (Table 1). In the empirical phase of the study, focus groups and individual interviews were carried out with different groups of young people aged 18–30, selected according to life course phase relating to education, employment status and occupational level.

It is axiomatic in cross-national studies to be attentive to the social science concepts which the different country research teams draw upon and how these play out methodologically—in terms of how informants make sense of concepts and how researchers translate and interpret them in practice. For such processes of ‘translation’ in cross-national research are likely unwittingly to reflect rather than reveal the characteristics of the contexts researchers seek to study. There is in short a danger of ‘insider bias’ (Hantrais, forthcoming).

Thus in this study, the ways in which the focus group moderators framed the questions on the fieldwork guide and the way respondents interpreted them reflected dominant normative and cultural assumptions, in this case concerning the history of
maternal employment and childcare in the different countries (Smithson & Brannen, 2002). Differences later emerged in the ways in which the questions had been put by moderators to young people about combining work and family in the future. In order to make sense of these differences and the assumptions they revealed we (the UK team) were reliant to some considerable extent upon the contextual knowledge gained from our own understandings and in respect of other countries on those of our colleagues. We were also reliant upon national official statistics while qualitative studies conducted in particular countries were rarely available to us in translation (none of us spoke the languages of all the countries in the study).

Some variation in the way moderators ask questions is allowed in the focus group method. Moreover in some cases we did not do all the moderation ourselves. In analysing some of the focus group material across the five countries, we were struck by how the questions about parents’ employment were posed differently depending on the context (Smithson & Brannen, 2002). For example, in the UK focus groups, the question was typically posed thus: ‘Can you see yourself giving up work when you had a child? Would you carry on working when your children were young?’ Posing the question thus allowed young people to respond in terms of their ‘personal choices’, which has been the leitmotiv of much British public policy in recent years. It suggested to young people that there may be alternatives, reflecting current UK public policy changes and practices concerning the escalating employment of mothers over the 1990s, especially the employment of mothers with young children. This framing contrasted with that of the moderator in Ireland who made strongly gendered assumptions about full-time motherhood (the norm in Ireland at the time, albeit change was beginning to happen): ‘Some people would say that a pre-school child would suffer if his/her mother [our emphasis] was employed and others would say it made no difference?’ Here the Irish moderator introduced the possibility of negative effects upon children—signified in the words ‘child would suffer’.

The sociologists in the team were particularly mindful of the tendency in much current qualitative enquiry to place undue emphasis upon discourse and the subjectivity of respondents. This danger was to some extent minimized by the study’s research design: Young people were selected on the basis of age, educational level and occupational status. However, during the course of the focus groups we found little reference by young people to the structural context and the constraints upon their lives. For example, young Norwegians university students displayed what we termed a ‘confident planning mentality’ about their future lives as parents and workers but failed to suggest how such feelings of mastery and independence were premised upon the support of a strong welfare state in Norway (Brannen & Nilsen, 2002). It was therefore important to reveal the link between the individual’s sense of agency within the structural context and to inject this into the interpretation of the focus group data in the analysis and writing up.

Conclusion

A multi-method strategy may enter into one or more phases of the research process: the research design; data collection; and interpretation and contextualization of data. I
have argued that in understanding the practice and value of working qualitatively and quantitatively it is necessary to distinguish between the context in which researchers design research for particular purposes and frame particular questions, from the context in which they make sense of their data and recontextualize them in relation to ontological, epistemological and theoretical assumptions. The paper has given some examples of research in which different methods were chosen to address different aspects of the research design and different research questions. It has also indicated how research designs require us to find particular groups and how a quantitative sample may lead to the identification of relevant groups for in-depth study. Reference was made to linking a qualitative sample to statistically representative samples and the advantages for different parties. Disadvantages may also accrue as when a nationally representative sample does not generate the groups that qualitative researchers wish to access (and who may be difficult to reach via a survey).

The paper has also suggested that a fieldwork method may include a quantitative approach so that data on particular items are collected systematically; some questions on the interview schedule discussed were treated quantitatively (for example on behaviour and practices) while others had a qualitative character. An interviewing approach which allows interviewers to probe and the interviewees to give narratives of incidents and experiences is likely to result in a more holistic picture of people’s understandings than a conventional survey analysis would provide and elucidate the meanings that research participants attribute to their practices and actions.

The paper has also discussed contextualization and interpretation as a separate phase of the research process and as a phase that informs other phases. Contextualization is a critical part of a multi-method strategy in creating and making sense of data. In methodological texts there is surprisingly little attention given to the issue. Indeed it is only when the issue of working cross-nationally is addressed that contextualization deserves separate attention (Hantrais, 1999) and is addressed explicitly: in terms of the development of research instruments and question wording and in the interpretation of people’s responses in a given national context. It may well be that it is ignored because of its compartmentalization as reviews of official statistics and the literature. Until the arrival of systematic reviews, literature reviews did not routinely require methodological discussion. The paper has moreover noted that qualitative analysis in its emphasis upon the textual may be rather weak in contextualization, that is in making sense of data in relation to structural contexts and particular historical moments. At worst, quotes from informants are sometimes presented in the written outputs of studies without reference to context, so that meaning is often narrowly interpreted to refer to actors’ own interpretations. Thus agency may be attributed to actors without reference to the resources that are available to them. In this way there is a risk that we may fail to make the classic sociological link between the individual and society (Nilsen & Brannen, 2002; Brannen & Nilsen, forthcoming).

To conclude, the aim of methodology is to help us to understand, in the broadest possible terms, not only the products of scientific enquiry but the process itself (Kaplan, 1964, p. 23). A multi-method strategy should be adopted to serve particular theoretical, methodological and practical purposes. Such a strategy is not a tool kit or
a technical fix. Nor should it be seen as a belt and braces approach. Multi-method research is not necessarily better research. Rather it is an approach employed to address the variety of questions posed in a research investigation that, with further framing, may lead to the use of a range of methods. However, the resulting data need to be analysed and interpreted in relation to those methods and according to the assumptions by which they are generated.

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