

Journal of Mixed Methods Research

<http://mmr.sagepub.com>

Barriers to Integrating Quantitative and Qualitative Research

Alan Bryman

Journal of Mixed Methods Research 2007; 1; 8

DOI: 10.1177/2345678906290531

The online version of this article can be found at:

<http://mmr.sagepub.com/cgi/content/abstract/1/1/8>

Published by:



<http://www.sagepublications.com>

Additional services and information for *Journal of Mixed Methods Research* can be found at:

Email Alerts: <http://mmr.sagepub.com/cgi/alerts>

Subscriptions: <http://mmr.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations <http://mmr.sagepub.com/cgi/content/refs/1/1/8>

Barriers to Integrating Quantitative and Qualitative Research

Alan Bryman

University of Leicester, United Kingdom

This article is concerned with the possibility that the development of mixed methods research is being hindered by the tendency that has been observed by some researchers for quantitative and qualitative findings either not to be integrated or to be integrated to only a limited extent. It examines findings from 20 interviews with U.K. social researchers, all of whom are practitioners of mixed methods research. From these interviews, a wide variety of possible barriers to integrating mixed methods findings are presented. The article goes on to suggest that more attention needs to be given to the writing of mixed methods articles.

Keywords: *mixed methods research; barriers; writing; exemplar*

As a strategy of social research, there can be little doubt that mixed methods research has moved forward a great deal in recent years. As a result of the efforts of methodologists and researchers, there is nowadays considerable understanding of a variety of issues, such as the various ways in which quantitative and qualitative research can be mixed (e.g., Bryman, 1988; Morgan, 1998; Tashakkori & Teddlie, 1998). However, at the same time, the fundamental issue of the degree to which mixed methods researchers genuinely integrate their findings has not been addressed to a significant extent. In other words, how far do mixed methods researchers analyze, interpret, and write up their research in such a way that the quantitative and qualitative components are mutually illuminating? This is what is meant in this article by “genuinely integrate.” It involves the question of whether the components of a mixed methods investigation are related to each other or whether they are either totally or largely independent of each other. In the context of this article, which is concerned with the degree to which researchers link their quantitative and their qualitative findings in the course of analyzing and writing up their findings, the issue is one of establishing what factors impede the capacity of researchers to engage in such integration. The key issue is whether in a mixed methods project, the end product is more than the sum of the individual quantitative and qualitative parts. To a significant extent, this issue has been marginalized in much writing on mixed methods research. Thus, for example, in a sequential design (Morgan, 1998), if the quantitative component follows the qualitative one, is there some attempt to embellish the quantitative findings so that the qualitative element is not solely a springboard for hypotheses to be tested using a quantitative approach?

Authors' Note: I wish to thank the three referees of this article for their constructive comments and the editors for their helpful guidance on revising the article. I also wish to thank the Economic and Social Research Council for funding the research project “Integrating Quantitative and Qualitative Research: Prospects and Limits” (Award No. H333250003), which made possible the research on which this article is based.

In their examination of evaluation research articles, Greene, Caracelli, and Graham (1989) identified this issue as a problem area. Greene et al. found that 44% of the 57 articles they examined did not integrate the quantitative and qualitative data. Indeed, only 5 articles integrated the quantitative and qualitative data during analysis. Similarly, in her examination of mixed methods articles in the education field, Niglas (2004) concluded that “substantial integration of qualitative and quantitative data during the analysis was exercised very rarely” (p. 98).¹

These findings and comments suggest that mixed methods researchers do not always bring their findings together and that the quantitative and qualitative components are treated as separate domains. There may be several reasons for this tendency. One is that the integration of quantitative and qualitative findings may not always be intended. For example, when the mixed methods researcher conceives of a project as involving quantitative and qualitative components, each of which is designed to address distinct research questions, the prospect of integration may not be paramount in the researcher’s thinking, so that integration is pushed to the side. In other words, integration of mixed methods findings may not always be intended, although that is not to suggest that there may not be some value in exploring connections between the quantitative and the qualitative findings, even though the research may not have been set up that way (Bryman, 2006a; Hammond, 2005).

Whether the fact that quantitative and qualitative findings are not always genuinely combined should be viewed as a problem is an issue that has not been debated a great deal in the literature. At the most obvious level, lack of integration suggests that mixed methods researchers may not always be making the most of the data they collect. Bringing quantitative and qualitative findings together has the potential to offer insights that could not otherwise be gleaned. Thus, even when a fusion of the two sets of findings was not envisioned at the outset of a project, it may be valuable to consider whether the findings suggest interesting contrasts or help to clarify each other.

However, another consideration, which is the focus of this article, is that mixed methods researchers may experience barriers to integration in the course of their studies. In other words, there may be practical difficulties that impede their ability or inclination to combine or integrate their findings.

Research Methods

The empirical component of this article derives from interviews I conducted with 20 U.K. social scientists during the course of a study in 2004. The interviews were concerned with their practices in relation to, and views about, research that combines quantitative and qualitative approaches. These researchers are essentially a purposive sample generated from an examination of articles published in books and journals during the period 1994 to 2003. Many of the interviewees were identified in the course of a content analysis of articles that used a mixed methods approach and that were published during this period. The interviews were conducted with a semistructured interview guide. The interviews were concerned with the researchers’ views on and practices in relation to the integration of quantitative and qualitative research. The typical interview lasted around 45 minutes. Interviewees varied between senior figures in the field and relatively new researchers. They conducted their

research in at least one of the following fields: sociology, social psychology, human and cultural geography, media and cultural studies, and organization studies. The interviews were analyzed within NVivo for a variety of themes using a coding scheme and for consistencies and inconsistencies within the overall narrative of each interview.

During the course of the interview, respondents were asked whether they found it straightforward to combine their quantitative and their qualitative findings. This was the main source of reflection on the issue of integration examined in this article, although interviewees sometimes addressed this issue before this question was asked and also at other junctures in the course of the interview. Another question that brought out reflections concerning the degree to which quantitative and qualitative components are combined was a question that sought interviewees' reflections concerning the mixed methods research that they read. When they were reflecting on the degree to which they or others integrate quantitative and qualitative research, they were almost always referring to the degree to which the quantitative and qualitative findings were being linked. The general impression that emerged from these interviews was that researchers felt that integrating quantitative and qualitative research at the level of designing the research and developing research instruments did not exercise them greatly. It was bringing together the analysis and interpretation of the quantitative and the qualitative data and writing a narrative that linked the analyses and interpretations that was a cause for concern both in their own work and sometimes that of others.

Findings

In the course of conducting the content analysis of articles based on mixed methods research, which is reported elsewhere (Bryman, 2006a), I noticed a tendency for many authors to foreground the fact that they were using both quantitative and qualitative research but either to report just the quantitative or the qualitative data, in which case the article was not included in the content analysis, or to give much greater attention to one rather than the other. A further tendency that was discerned was for the findings to be presented in parallel so that there was more or less no integration at all. These tendencies suggest that in many cases, the quantitative and the qualitative elements were barely integrated or were not integrated at all.

The interviewees often noticed that quantitative and qualitative findings deriving from mixed methods projects were frequently not integrated. One interviewee was quite explicit about the fact that he did this:

But I think—I think the final point is something that you did raise earlier—the issue of problems of fusing the two together, is something that I probably haven't thought through in as much detail as I should have done and I don't think other researchers probably think through those issues as well.

One is actually trying to bring the two research methods together and the—the representativeness of the two data sets together. I think it's very difficult to intertwine them. I am—in some ways, what I've done in my research to overcome this problem of comparing one against the other, is to analyze them separately and to represent them separately in any writing up. (Respondent 6)

Similar remarks could be discerned in other interviews:

So I think generally getting that balance, so that we generally integrate the data, is quite—quite a difficult thing to do. I think I could easily slip into doing one rather than the other. (Respondent 16)

I think there is a tendency to do, what I own up myself, I've said I've been guilty of sometimes and it is that, you know, in name you appear to be doing mixing methods but in practice—in terms of the analysis and writing up that, mixing doesn't always come through in the way the data's analyzed. (Respondent 16)

. . . at the end of that day, that actually it is incredibly difficult to really make them work together . . . (Respondent 16)

In interviews, most of the researchers expressed concerns about how far they and other researchers genuinely combine quantitative and qualitative findings. In the course of their reflections on this issue, several interesting factors that inhibit integration were mentioned. They sometimes acknowledged that this was a problem area for the development of mixed methods research. One interviewee felt that “I guess it'd be quite interesting to know how much people use the data from the different methods when they actually come to report the—report their findings” (Respondent 1). Respondent 15 felt that she was sometimes disappointed when she read mixed methods articles and other outputs:

I mean sometimes you read the mixed method research—you'll read something for a mixed methods research project that is based on one—you know—one of the methods rather than the integration of them. And sometimes—you know, sometimes you will read something . . . where you think you just haven't made the most of that. You know, you've used two, you've used two or three methods or whatever, but actually you haven't shown me how that adds value to your argument, you know. So sometimes I find it a bit disappointing . . .

Respondent 12 said,

Yes, so maybe there's a kind of superficialness—put it all together. I think that there is a lot of reports of the outcomes of these different methods separately, rather than trying to integrate them. So, you know, the standard PhD thesis says in chapter 5, I'll do the interviews in chapter 6, I'll report the survey. And as a supervisor I'm always saying but how do you put them together? And there's a—there's a silence if people aren't sure how to do that integration.

Another interviewee felt that the issues to do with bringing quantitative and qualitative data together were not that distinctive, but elaborated on this point by suggesting that it is the tendency to think of quantitative and qualitative research as discrete domains that inhibits mixed methods researchers:

So there are—I mean, I don't—in other words, I don't think the problems of combining the two things are pretty—are hugely different, than the perils of just doing research, full stop, other than the fact that we—I think the perils, such as they are, come from the fact that we are all raised and taught to believe that there is this thing called quantitative method and there is this thing called qualitative methods and there's a problematic relation between them. (Respondent 10)

We see, then, in these comments a feeling that there is indeed a problem with genuinely integrating quantitative and qualitative findings. In the course of the interviews, eight factors were identified as possible barriers. These eight barriers to integration are referred to below, and a ninth will be added based on my own reflections deriving from comments in the interviews.

Different Audiences

Mixed methods researchers sometimes find that they end up writing up their quantitative and qualitative findings for different audiences. Either the nature of the topic attracts certain audiences or impressions of audiences' expectations sometimes means that either one set of data is highlighted or used more or less exclusively.

I think any particular issues that came up, for me, were about writing it up. And it almost felt like I was writing different bits up for different audiences. There was something about the audiences—and that might be because this was a distinctive project, in terms of the stakeholders that we had, so we had the funding body who, who I'm sure were a lot happier with the quantitative kind of results, because we had to quantify a whole number of different measures, in a bench marking kind of way. But for me, the issue was about combining them at that writing up stage so making sense of them, and making sense of the results into something that linked to coherent. So I had interesting experiences, for example trying to publish from it, which all came down to the difficulties I had with writing up—the kind of the quantitative and the qualitative elements together. And it was almost something about that I actually thought differently about the functions of the different—the two different pieces of research. Which meant, that when I actually wrote it up it was harder to do. (Respondent 2)

I have found that if I do both I will be listened to by a wider audience but there are audiences who only want to hear about my survey findings and regard the rest as fluff. And I can speak to those audiences and there are others who want to hear about, you know, the in depth contextualized feel of everyday life and they stop listening if I tell them about my survey. (Respondent 12)

Thus, perceptions of the expectations of audiences may cause mixed methods researchers either to write up one set of findings to the exclusion of the other or to make only minimal use of one set of findings, while emphasizing the other set.

Methodological Preferences

Some mixed methods researchers tend to emphasize one set of findings because they have greater faith in one rather than the other, usually because of their methodological predilections. This viewpoint can be seen in the following sequence of remarks:

Do you find it relatively straightforward to combine quantitative and qualitative methods of investigation?

Well I don't know whether I combine them. As I said, one just sets out the—what I call the baseline sets out the conditions for the other. I don't systematically combine them, I mean except in as much as you can say that I'm now trying to find ways of putting [topic] and

[topic] together, in longer term work with fewer households. And the problem is set up for the quantitative but I'm not sure there's any clear way in which the two otherwise are being put together.

What about the data as such? Do you find it relatively—thinking back over some recent projects—do you find it relatively straightforward to link the two sets of data?

I—ultimately I don't really use the quantitative material for much more than I've just described. I put my faith—I mean essentially I suppose, I'm a skeptic on questionnaire-based materials. I do it for various reasons but I'm not expecting the stuff to give me more than hints and also to give me the sense of as I've said, the breadth of what's there. I put—I actually use—what I call data is the qualitative material, that's what I think of as data and that's what I think of as stuff that I've got into in sufficient depth, that I feel comfortable that I could talk on the basis of that material. So the quantitative is background; it's not actually data. (Respondent 4)

A variant of this point was for the interviewees to see themselves as having greater familiarity with either quantitative or qualitative research methods. They therefore emphasize the findings that they feel more confident about in terms of their own skills.

I suspect that the people who have been mostly trained in survey analysis will put all the emphasis on the survey data, and those who are primarily qualitative researchers probably will interpret all the qualitative data and add a few percentages kind of against—in with it and that's pointless, that seems to me pointless. (Respondent 1).

I tend to move on—much on—focus much more on the qualitative work. And what I think I'm often guilty of in writing up is not making the most of the quantitative data. (Respondent 12)

I think there were specific issues that originated from the fact that I wasn't as experienced, I don't think, in line of quantitative data, because I hadn't done it as much recently, so I don't think I was particularly good at it actually—so trying to combine it together in that way. (Respondent 2)

These remarks suggest that lingering affiliations to either a quantitative or qualitative research approach can inhibit the mixed methods researcher's inclination to combine and make the most of the two sets of findings.

Structure of Research Projects

Another interesting point was the suggestion that sometimes a mixed methods research project may be set up in such a way that makes it difficult for integration to take place. An example might be where a project is designed in a structured way, for example, so that a survey could be conducted. The structured nature of the survey then drives the project and the way in which the qualitative data are collected and analyzed. This means that the structured nature of the project dictates the contours of the qualitative component, which tends to place it in the role of handmaiden in relation to the quantitative component. The following interviewee reflects on hearing a paper given at a conference that presented some findings from a mixed methods project and that also gave a fairly detailed account of the overall research process:

If you start from a quantitative position, or methodology, it's actually very difficult to then add the qualitative in, because—and I—what I came away feeling was that actually what's the key thing? It's the level of structure that you're using, at the outset, how far you can leave that open till further down the line really. And if you're going to do something—if you set something up in a quantitative way, the chances are you're going to set it up in a structured way and if you do that then you're building an assumptions-sort of agenda. (Respondent 20)

This interviewee is suggesting that when a mixed methods project is set up in such a way that either the quantitative or the qualitative component provides the main point of orientation, it will be difficult to bring the findings together because the overall design was not conceptualized in a sufficiently integrated way.

Role of Timelines

The timelines of the quantitative and qualitative components may be out of kilter so that one is completed sooner than the other. This may have to do with staffing issues, an example of which was reported by one interviewee, or it may have to do with the different rhythms of the quantitative and qualitative parts. In research teams where there are quantitative and qualitative specialists, where one phase is lagging behind the other, pressure may build up to start publishing the findings that are more advanced. Typically, this entailed a survey component being much faster to conduct and analyze than a qualitative one, as the following comments suggest:

You want to—you can publish the quantitative stuff, almost straight away, so then there's an issue of—you do have to have a lot of time to bolt them all together. Unless you're on top of that, one probably falls—well, it's often the qualitative's gonna fall by the wayside, 'cos you're gonna be there publishing the quantitative as soon as you can do it. (Respondent 18)

Well, the two—the two broad methods move out of step, I think, they have a different flow and the stages to prepare them for analysis are very different. (Respondent 7)

I think the same general principle applies in a multimethod study where you have a one-shot, conventional survey questionnaire, you know, it goes out, comes back in, it gets crunched. The qualitative stuff, you're thinking all the time, and so you're constantly reconstituting the inquiry. (Respondent 7)

And the third issue is issues about timing and issues about the actual lifespan of the research project that you're undertaking. Both questionnaire surveys and interviewing can be a very time-consuming process. And you do tend to get different types of information from those two research methodologies—different qualities, different quantities, and a research project combining the two, from my experience, can last for 6 to 12 months—to a year, and often, it is difficult to know when to stop—because one always feels as though you could get a little bit more out of the—out of the population. (Respondent 6)

However, it was not exclusively the case that the quantitative component proceeded faster than the qualitative one. In the following passage, a respondent notes that he or she was reading an end of project report for the Economic and Social Research Council

(ESRC) that was based on a very mixed methods project. In this instance, the qualitative component had moved faster than the quantitative one:

Yes, it was to do with issues around who was staffing the survey side of it. Because the intention being for the survey to happen first, and then the qualitative stuff to build on that sample but in fact it had happened completely the other way round. So the analysis of the survey was lagging quite a long way behind the qualitative. (Respondent 20)

As these comments suggest, the possibility that the quantitative and the qualitative components of a mixed methods study may get out of phase with each other, because of their different needs and rhythms, may inhibit the integration of findings because one set is generated faster than the other. Within teams of researchers, this can bring pressures to publish as soon as possible, even though not all the findings have been generated.

Skill Specialisms

One way of overcoming the “trained incapacities” (Reiss, 1968) of researchers that might hinder their ability or inclination to blend quantitative and qualitative data is to develop teams that can bring together specialists in both kinds of work. Respondent 17 was explicit about this possibility:

You probably need—ideally you have a team where different people have different specificities—different—specialist division of labor and different people operate to their strengths. I think it’s very difficult to be both a really good qualitative and a really good quantitative researcher actually.

Respondent 11 echoed this view when she said, “Well I think the most challenging thing about doing mixed method research is to make sure that you have the right range of expertise in the research team that you’re working with.”

However, it was also suggested in interviews that when research teams are composed of quantitative and qualitative specialists, this may militate against the degree to which findings are integrated. In other words, skill specialisms may impede the integration of findings. It was recognized that putting together quantitative and qualitative specialists in a team does not necessarily lead to a mixed methods project. Respondent 11, who made the previous quoted remark, gave an indication that the linking of different skills in teams could itself be difficult when she went on to say,

Most I think, probably most of those kind of studies are probably collaborative studies involving people who, from a range of different perspectives—so there are issues, obviously, about bringing together people with different expertise and helping them to work together and making sure that the—that the approaches and perspectives fit.

One interviewee was explicit that bringing together skill specialisms in teams could actually inhibit the ability to integrate quantitative and qualitative findings:

We’ll get together a team and we’ll have a statistician and a qualitative person and somebody else and that’ll make it an . . . a mixed method thing. And of course it doesn’t—you know,

it's not that simple. So I think the issues are how to do it in a way that will work, both in terms of analyzing the data but also how you people the team and how—you know—just how you do it strategically. (Respondent 15)

A similar view can be seen in the following remark:

There are sometimes some issues about project management because one is trying to bring together, sometimes, in a research team, people with quite different perspectives and help them to work together on the project and it may not always be very easy if they are very good at the type of research they do, but do see themselves as particularly in one camp rather than the other, then you sometimes need to think about ways of helping them to work together. (Respondent 11)

As these remarks suggest, the solution to the fact that many researchers have specialized in their training in either a predominantly quantitative or qualitative tradition is to bring together teams that weld these skills together. However, the presence of skill specialisms may lead to compartmentalization of roles and responsibilities that can hinder the integration of findings.

Nature of the Data

Researchers may feel that one set of data turns out to be more intrinsically interesting or striking than the other set. This tends to result in the more interesting findings—regardless of whether they are quantitative or qualitative ones—being given priority and structuring the writing up. One interviewee described one project where this occurred:

As it's turned out some of the more interesting stuff was in the qualitative data. And that's led some of the researchers, who were involved in that, to sort of write that up in a slightly different way and it is—it's sort of divorced it from the quantitative. (Respondent 18)

This was not a common refrain among the interviewees, but I suspect that it may have been more significant because most of them identified themselves as predominantly either quantitative or qualitative researchers. As such, it may be that they would be more likely to find one set of data more compelling than the other, depending on their methodological backgrounds.

Bridging Ontological Divides

One researcher mentioned that there can be great difficulty in his field to do with marrying an objectivist account with a constructivist one based on people's discursive accounts. The latter may deny the reality of the very phenomena that the objectivist account seeks to investigate. This is not so much a clash in epistemological and ontological positions as a practical difficulty to do with tying the two together.

Another problem which runs through all of our work—but it was only made clear to me recently in—in vivaing a PhD thesis in this area, was how do you square objectivist accounts

of [topic], with the more subjective accounts of how people construct [topic]? So if you're doing work on let's say public perception of [topic], then there's an epistemological difficulty because you might be interested in people's accounts, from a very socially constructivist discursive perspective, which of course is very agnostic or ambivalent about whether there is a real [topic] out there or not. On the other hand, [there is clear evidence that] it is a real public health problem. (Respondent 18)

The issue here is one of how the researcher can bring together data, in this case on a health-related topic, where the quantitative data provide more or less indisputable evidence of a problem but the qualitative data provide a constructionist account that problematizes and is "agnostic," as the interviewee put it, about the very phenomenon about which there is objective evidence of an issue. In discussions of mixed methods research, epistemological and ontological issues have been marginalized to a significant extent as pragmatism has emerged as a major orientation to combining quantitative and qualitative research (e.g., Onwuegbuzie & Leech, 2005).

However, as noted previously, only 1 of the 20 interviewees mentioned the issue of the ontological divide. Most of the interviewees depicted themselves as pragmatists. They either used this term or employed self-descriptions that were redolent of pragmatism (Bryman, 2006b). When asked about how far epistemological and ontological issues concerned them, most interviewees depicted themselves as pragmatists who felt it necessary to put aside such issues to secure funding for their research interests and to publish their findings. For example, Respondent 16 expressed the following view:

So I guess I don't tend to think of it as a—at a philosophical level, I tend to think of it in terms of the outcomes and what you can do with what comes out of it. I mean I'm a really pragmatic academic. (quoted in Bryman, 2006b)

In the case of Respondent 18, the source of the above comment on the ontological divide, the issue was not one that had occurred in relation to his own research but had arisen in the course of his reflections on conducting a viva voce examination of a doctoral student. However, he did suggest that he recognized the potential for the same dilemma in relation to his own work and went on to say that he was speaking to "somebody who was binary, a couple of weeks ago, [who said that] that you just had to take a pragmatic perspective on this." He confessed that he was unsure how to resolve this issue at an ontological level and, indeed, gave the impression that he did not perceive it to be one that was capable of resolution.

Typically, then, mixed methods researchers seem not to dwell on epistemological and ontological issues and exhibit a clear pragmatism in their work. What seems to have happened in Respondent 18's case is that the ontological divide manifested itself in relation to the examination of a doctoral thesis, though he was aware of its possible ramifications for his own work and that of others. However, as previously noted, he was the only interviewee to draw attention to this issue. The pragmatism of most mixed methods researchers interviewed has either resulted in this issue being ignored or not occurring to them. It is also possible, and Respondent 18 did suggest this possibility, that the ontological divide is more problematic in relation to certain substantive areas (a health-related issue in this particular case). A further possibility is that the issue is especially acute when, as in the case of the doctoral research described by Respondent 18, a discursive approach is taken for

generating the qualitative component. The tendency for discourse analysts to view discourse as both constitutive of social worlds and as shaped by those social worlds renders those social worlds problematic (Fairclough, 2003). This stance may pose particular problems for researchers seeking to integrate quantitative and qualitative research. However, mixed methods research involving language-based approaches like discourse analysis are unusual—only 5 of the 232 articles examined in the previously mentioned content analysis employed this approach (Bryman, 2006a). This may account for the fact that only one interviewee mentioned it and for the lack of attention to the issue in many discussions of mixed methods research.

Publication Issues

It was also suggested that publication issues may hinder integration. It was felt that the tendency for some journals to emphasize either quantitative or qualitative research may inhibit integration because they tend to want either quantitative or qualitative evidence to be highlighted.

So it's about, again, providing—diverse stories, but in doing that we have to decide do we use the quantitative data to frame the paper, for instance, because that would have an impact on the selection on the qualitative data. So certain positions where I have to make, for example—or perhaps we should write a paper, just based on the qualitative data, or use the qualitative data as the basis. It's a struggle, I think. I think it's about prioritizing the different data sets. You know there's something that we're still learning and struggling along the way really. (Respondent 1)

I mean there's an interesting battle to—to be won there I think, in the [topic] arena, to get some really good mixed methods papers published in the mainstream journals . . . so there's probably a lot of it happening but it's not being written up . . . and it's not appearing in some of the journals that you'd—and it would be difficult, wouldn't it, for a lot of sociology journals wouldn't warm to a lot of quantitative stuff nowadays, would they? In the same way that some of the psychology journals you just couldn't put any qualitative stuff in at all. (Respondent 18)

Respondent 3 felt that a problem for many mixed methods researchers was that they “face certain prejudices.” He spoke of the problems of getting articles that included statistical material into a strongly qualitative journal and the problems that word length can cause. Similarly, he noted that journals in his field tended to be quite short, which suited articles based on quantitative data exclusively quite well but represented a problem for mixed methods articles.

Mixed methods researchers would seem from these comments to face two kinds of problems when it comes to publishing in journals. One is the tendency for some journals to be known (or believed to be known) to have a methodological bias toward either quantitative or qualitative research. Researchers believe that the presence of such a bias limits their ability to publish mixed methods findings. The other is that the need to discuss not just two sets of findings but to describe the ways in which at least two sets of data were gathered may make it difficult to publish integrated findings in journals due to the length restrictions that journals impose on authors.

Problem of Exemplars

The final barrier is not one that was explicitly mentioned as a barrier to integration by my interviewees. It is one that I perceive as a barrier following their replies to a question I asked requesting them to nominate an exemplar of mixed methods research. This question was designed not just to generate information on exemplary mixed methods research but to act as a springboard for further questions about what made the nominated output exemplary. However, virtually all of the interviewees struggled to nominate an exemplary study.² The following comments illustrate this:

Hmm, that's tricky. I think it's difficult to answer that question. I don't think I'd—I'd find it difficult to find an exemplar. (Respondent 6)

It's hard to think of it, off the top of your head, which shows, I think, how little mixed methods are put—into practice effectively because if they were being put into practice effectively, then I should be able to reel off two or three. So if you said to me give me examples of you know exemplary qualitative research—then I could do that instantly, which is a bit worrying. Yes, definitely. (Respondent 12)

I mean I think where it falls down, I think probably there's lots of good examples of people collecting good diverse data sets, I suspect there's less examples of people writing them up in a genuinely integrated way. (Respondent 12)

Furthermore, their body language often suggested considerable discomfiture at the question, in that it could have been taken to suggest that I was trying to catch them out, which was emphatically not the case.

However, the point of drawing attention to the difficulty interviewees had in nominating exemplary mixed methods research is that it may well be that the relative absence of well-known exemplars makes it difficult for researchers to draw upon “best practice” when it comes to combining findings.

These nine barriers to integration can usefully be grouped into three different types. First, there are barriers that relate to intrinsic aspects of quantitative and qualitative research and their constituent research methods. The issues “structure of research projects,” “bridging ontological divides,” and the “role of time lines” would seem to be of this type. Second, there are issues to do with the wider institutional context of mixed methods research. “Different audiences” and “publication issues” are of this type. The first suggests that particular audiences have expectations or biases that predispose them to seek an emphasis on one type of data rather than another, whereas the second implies that journal editors and referees exhibit such preferences too. A third cluster is to do with the skills and preferences of social researchers. This includes “methodological preferences,” “skill specialisms,” and “nature of the data.” This last factor fits in this category rather than others because the issue of whether one set of data is viewed as more interesting or compelling than another has to a significant extent to do with the preferences and expectations of the researchers. This categorization of barriers is striking because it suggests that the reasons for the difficulty of integrating quantitative and qualitative research is only partly to do with factors intrinsic to these two research strategies; it is also very influenced by the

predispositions and preferences of researchers and of disciplines and funding agencies. The “problem of exemplars” is a matter that crosses these three categories of barriers.

Discussion

The findings have identified several factors that impede the ability of mixed methods researchers to bring together the quantitative and qualitative results of their projects. They provide possible implications that future mixed methods researchers might like to consider regarding extracting greater value from their projects. For example, practitioners may consider designing their studies in such a way that recognizes in advance the implications of the different time lines and rhythms of quantitative and qualitative investigations. In this way, it may be possible to build in greater opportunity to bring the two sets of findings together and for the quantitative and qualitative components of projects not to drift apart in terms of the phasing of the various stages of the overall research process. Also, journal editors may be encouraged to consider how the concerns of mixed methods researchers regarding the restrictions on length and the reputations (both real and imagined) that journals have for looking unfavorably on either quantitative or qualitative findings might be addressed.

The findings reported in this article suggest that in the eyes of mixed methods researchers, a significant difficulty is that of merging analyses of quantitative and qualitative data to provide an integrated analysis. One consideration that may aid the linking of analyses is not to lose sight of the rationale for conducting mixed methods research in the first place. Content analyses suggest that it is quite common for mixed methods researchers to neglect their rationales for doing such research and for it to be used in ways that differ from the rationales (Bryman, 2006a; Greene et al., 1989). In such circumstances, it is possibly unsurprising that mixed methods researchers experience uncertainty about how best to approach the potential connections between their quantitative and qualitative data. If mixed methods researchers return to their grounds for conducting such research in the first place, they may be able to use their arguments as a platform for conducting an analysis that is integrative. Furthermore, the discussion above of exemplars implies that there ought to be greater recognition of approaches to integration in mixed methods investigations. This would entail or require greater attention to the different generic forms that integration can take and the identification of exemplary examples of each category. At the very least, the findings reported in this article suggest that the mixed methods research should ask a simple question: Has my understanding of my quantitative/qualitative findings, been substantially enhanced by virtue of the fact that I also have qualitative/quantitative findings, and have I demonstrated that enrichment? If the answer is no, it is difficult to see how the researcher can have conducted an integrated analysis beyond the bare minimum.

The considerations of these issues also draws attention to a significant deficiency in our understanding of mixed methods practice, namely, insufficient attention has been paid to the fact that mixed methods research has to be *written up*. There is a general appreciation of issues such as the different ways in which quantitative and qualitative research methods might be combined and typologies of mixed methods research have identified the significance of such issues as priority and sequencing (e.g. Morgan, 1998). By contrast, the matter of how to present mixed methods findings in such a way that the

quantitative and the qualitative findings are genuinely integrated, rather than standing as separate spheres or barely referring to each other, has not been touched upon to any significant extent in the burgeoning literature in this field. In genuinely integrated studies, the quantitative and the qualitative findings will be mutually informative. They will talk to each other, much like a conversation or debate, and the idea is then to construct a negotiated account of what they mean together. The metaphor of triangulation has sometimes hindered this process by concentrating on the degree to which findings are mutually reinforcing or irreconcilable. Mixed methods research is not necessarily just an exercise in testing findings against each other. Instead, it is about forging an overall or negotiated account of the findings that brings together both components of the conversation or debate. The challenge is to find ways of fashioning such accounts when we do not have established templates or even rules of thumb for doing so. It is being suggested here that more attention needs to be given to the integration of findings and to the representation of those findings in publications.

Elliott (2005) has made a start in this connection by seeking to examine the writing strategy of a book based on both quantitative and qualitative data. Her comment on this aspect of the book is striking and very consistent with the findings reported above:

What is interesting about the book . . . is that although it combines results from the more qualitative and quantitative aspects of their research, these are still largely compartmentalized into separate chapters. This means that in the writing process, qualitative and quantitative results are not integrated, as they might be. (p. 185)

What is striking about this comment is that, as with most of my interviewees, there is a sense of disappointment, a sense that the reader deserves more from the findings than being presented with parallel accounts that barely connect. To put it another way, there is a sense that the written account should be more than the sum of the parts. The quantitative and the qualitative findings should be mutually illuminating, although the warning sounded at the outset of this article, namely, that this may not be appropriate to some ways of construing mixed methods research, should be borne in mind.

Conclusion

This article has identified several barriers to the integration of quantitative and qualitative research. In reflecting on the findings, it is suggested that insufficient attention has been paid to the writing up of mixed methods findings and in particular to the ways in which such findings can be integrated. Indeed, it could be argued that there is still considerable uncertainty concerning what it means to integrate findings in mixed methods research. The relative absence of well-known exemplars of mixed methods research makes this exercise particularly difficult, as it means that scholars have few guidelines upon which to draw when writing up their findings. One way of addressing this issue in the future would be to give greater attention to writing issues in mixed methods research and for scholars to draw on existing studies to explore some of the possible ways of writing up quantitative and qualitative findings in a manner that forges connections between

them. These could act as templates or models for future researchers. Until then, it could be argued that the potential of many forms of mixed methods research will be held back.

Notes

1. This lack of integration was found by the present author in the course of a content analysis of 232 mixed methods research articles from the period 1994 to 2003. The details of the content analysis can be found in Bryman (2006a). It was found that only 18% of all articles genuinely integrated the quantitative and the qualitative findings.

2. There is one exception to this assertion. One of my interviewees was asked this question but with a different emphasis. This interviewee had e-mailed me asking, "Could you give me a little more on the focus of your inquiries, so that I might get my thoughts together a bit better?" I replied giving a general account of the focus of the interviews and added, "I also ask at the end whether you are able to think of any exemplars in your field . . . of research that combines quantitative and qualitative research." I did this because I did not want the interviewee to say that he should have been forewarned of this question since he had taken the trouble to contact me in advance. Unsurprisingly, this interviewee was prepared for this question and was able to offer an exemplar.

References

- Bryman, A. (1988). *Quantity and quality in social research*. London: Unwin Hyman.
- Bryman, A. (2006a). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6, 97-113.
- Bryman, A. (2006b). Paradigm peace and the implications for quality. *International Journal of Social Research Methodology*, 9, 111-126.
- Elliott, J. (2005). *Using narrative in social research*. London: Sage.
- Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. London: Routledge.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11, 255-274.
- Hammond, C. (2005). The wider benefits of adult learning: An illustration of the advantages of mixed-methods research. *International Journal of Social Research Methodology*, 8, 239-255.
- Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications for health research. *Qualitative Health Research*, 8, 362-376.
- Niglas, K. (2004). *The combined use of qualitative and quantitative methods in educational research*. Tallinn, Estonia: Tallinn Pedagogical University Dissertation on Social Sciences.
- Onwuegbuzie, A. J., & Leech, N. J. (2005). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology*, 8, 375-387.
- Reiss, A. J. (1968). Stuff and nonsense about social surveys and participant observation. In H. S. Becker, B. Geer, D. Riesman, & R. S. Weiss (Eds.), *Institutions and the person: Papers in memory of Everett C. Hughes*. Chicago: Aldine.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.