



When Methods Meet: Qualitative and quantitative methods in longitudinal research

Paul Bradshaw, ScotCen and Dan Woodman, University of Melbourne, in conversation in Edinburgh February 2017.

In this sixteen-minute film Paul Bradshaw and Dan Woodman discuss their experiences of working on the collection and analysis of longitudinal data in different national contexts (Scotland and Australia) and using different mixes of quantitative and qualitative methods. Through their conversation it becomes apparent that although their projects have worked with participants of different ages and their research questions are not identical, they have both gained great insights from comparisons over time. By following people in the same cohort over time and by asking the same questions of people of the same age several years apart it is possible to get a strong sense of social change (as well as continuity in relation to some issues). They also discuss how changes in technology and in policy objectives require longitudinal researchers to keep the questions that they ask under review: use of social media is far more ubiquitous to-day than it was for previous cohorts, and things that are asked about people's use of social media have to be adjusted accordingly, while still trying to generate data that allow some comparison between cohorts. Similarly, policies relating to education and to inequality rarely stay unchanged for long, and the balance has to be struck between revising questions that have lost their relevance and keeping enough elements of a study to allow comparisons over time to be made. These time comparisons are typically over periods of years, but they do not have to be, and research projects being completed in short time periods can still employ longitudinal methods. The conversation also covered ethical challenges, researchers working as parts of teams, linkage of different data sets and secondary analysis, within the general theme that longitudinal research is a broad church within which interesting innovations are taking place all the time.

Transcript of conversation:

PB The methods I use are predominantly quantitative and we apply them as part of a large scale quantitative longitudinal study called 'Growing up in Scotland'. And the reason we are predominantly using quantitative methods is largely because the Scottish Government who are funding the study are very interested in population level outcomes for children growing up in Scotland. And they want to explore at that whole population level the differences, particularly between children from poorer backgrounds and children from less poor backgrounds. And at a basic level they recognise that quantitative data is essential for that sort of high level exploration of inequality.

DW I primarily use qualitative methods. I am part of a broader team that brings together the people with different skills and it's a mixed methods panel cohort longitudinal type design. So we have two groups who were recruited as they were finishing high school fifteen years apart. We followed them from the end of high school through their twenties and into their thirties asking them the same questions as we went along in a survey. And also taking a subsample of a larger sample and doing a qualitative longitudinal interview study alongside that gave us some of the depth.

It's sometimes an alternative way to get the explanations about what's going on in people's everyday lives behind some of the patterns you see in the numbers.

PB We are interviewing people using a survey questionnaire and it's a survey of parents with young children and actually it's a cohort study of these children. But we've largely been interviewing the parents but now we are supplementing that survey interview data with other forms of quantitative data we have collected from the children themselves and from the parents.

And now we are starting to link the survey data with routine administrative data, so what we've got is a very comprehensive and complex quantitative data set. Nevertheless we still take the opportunity to supplement that with qualitative data where we think that is going to add value to the particular topic that is being explored perhaps first of all in the quantitative data. Not with the same participants but with a separate group of comparable parents in similar circumstances and put the two together.

Sometimes we are combining methods but actually across separate studies to present that whole picture.

DW And I think this is something that social scientists are just beginning to get a bit better at, is working together as well. It doesn't have to be necessarily you that does the qualitative work as well. If you partner with others who might be able to fill in some of those parts of the picture. Because I am not sure of your experience, but one of the challenges we have is the time scales of longitudinal studies if you are collecting data every year, it can be hard to keep up so you can miss for a few waves of your data collection. Maybe a question isn't working out how you thought it would in terms of the data you are getting from it. Or it worked for the first wave and then three waves later you realise that circumstances have changed, the question isn't working in the same way or your sample has changed so you are not getting the data you wanted out of it.

So, some time has passed already. Have you had any experience of things like that?

PB Yes, certainly we have had experiences like that where we are already in our third of fourth wave of data collection and then we start working on a piece of analysis that goes back to the first wave of data collection and looks at a set of data we haven't looked at yet

and, lo and behold, we discover everybody has answered that question in the same way, or nobody has answered that question. Or that doesn't seem to work. But I think the other similar challenge that we've had in our study is funded by the Scottish Government and policy makers have a very quick need for evidence. And when you are working on a longitudinal study it can be very difficult to convince them of the time that is needed to collect the data and to build up a comprehensive longitudinal data set and that they might need to wait a few years for it to fully realise its whole value.

And what we've found in those circumstances is that what we will want to do is in fact ask the same question every year. But what they want to do is change the question. Because the question isn't relevant for the policy anymore.

And we've been caught out with that because when we've then subsequently wanted to look at, as we would do in longitudinal data, let's look at a trajectory, a pattern of people moving in and out of a certain status. It might be employment, it might be income. If we've changed the nature of how we ask that question over time, it becomes very difficult to determine that any change you observe is as a result of actual change or just because you've changed the question.

It's a slightly different take on it, but it is a challenge that we face.

DW There's various trade-offs you have to make. So when you do surveys of young people, attrition is a big problem. And you have a concern about not asking too much of the participants. Not developing a questionnaire that is going to take two hours to complete. But new questions come up; people who are interested in your data, maybe funders, maybe people who are part of the team who want to add new questions in. You will maybe think one or two questions aren't working. But you might want to try and fix them. And you are balancing off all these things to decide can we ask new questions, is that question worth continuing with if it's not working any more.

We do our best, but there are times when we go back and say well why did we ask the question like that because it's really not quite right. But now we have to decide whether it's good enough that there is something of value coming out. And continue because we get the value of that longitudinal data, or you let it go. So when you are doing this kind of research you are constantly making those kind of decisions. But as much as possible of course, what really makes it of value is the ability to track things over time.

PB And that is a unique selling point of longitudinal data, be it qualitative or quantitative.

But I think also what we each have in our studies is this ability to undertake this longitudinal time series analysis with multiple cohorts. And I think you were saying you've got two cohorts that are fifteen years apart, so that allows you to make comparisons between the two of them.

DW Yes, and we do a lot of comparisons around things for example like what our participants are looking for in a good job. And we use that to challenge some of the discourses around our younger cohort that are part of the group that in Australia is called GMY, or the Millennials in other parts of the world. And this idea that they crave flexibility and don't care about job security. We can use our data to show that even in their mid twenties and even in their late teens, just like the older cohort at the same age, they are saying job security would be great please. So one of the key things that we want to do is compare the two cohorts at the same age because it allows you to separate age and generational effects in that sense.

But there some questions that are just essential to understanding how times have changed that we didn't ask to the first cohort but we now want to ask to our second cohort. But even for example asking about social media, it really highlights one of the challenges of longitudinal research in a fast moving changing world, is that we began to ask a question about how often our participants used social media in about 2004 we had responses that went from I never use social media to the very top was I use social media several times a day. Immediately people can see what with a question like that might be today is that very quickly after one or two waves almost every single person in our study was saying they used social media at least several times a day, and the reason, which is my mobile phone.

So when we started to design this question, we were imagining a world that was maybe already starting to disappear. But the thing was from a slightly older generation, that weren't picking up on this, but social media was moving from something that you had to go to a computer station and click to open Facebook, to a thing that people carried around in their pocket all the time and had a Facebook application right there on the front.

We are also beginning to use tweets and also mobile phones as a device we use to try and collect data now. We also sent little reminders as a way to try and hold on to our participants. It's been really useful when you are studying a cohort that can be quite mobile.

PB We know that lots of these children in our cohort have got mobile phones now. And we are in a position as these children move into adolescence at age twelve. The next time we are hoping to speak to them will be age fourteen. Gradually the respondent in our study, the main respondent is going to move from the parent to the child, so it is a key point for us to keep this child engaged in the study. And we are thinking well, a great way to do that would be to design something that they can access on their mobile phone. Of course at the moment everything that we do in the study is done via the parent, you know we communicate directly with the child. But via a gatekeeper who is the parent. And accessing or asking a child to directly do something on their mobile phone is removing that sense of security. So we are very cautious about how we do it. But we certainly see it as an opportunity and a good opportunity as we are moving through that stage of adolescence. To keep these children involved.

If you think about your apps that tell you how many steps you are taking, how far you've run or walked, how much activity, these are really important objective measurements for our purposes.

So to be able to access that in a less burdensome way than currently going into households and spending lots of time with these families is very attractive. But also ethically problematic, it needs a bit of thinking.

DW Yes, well, in a segue I think into the one other prop I brought along with me which was my – almost four year old son Louis's transformer. So transformers were one of the shows that I watched as a five, six, seven year old and my son is watching it now. And if I asked a question on my survey about transformers I bring all this baggage around the good guys and the bad guys and what it all meant, and who the leader was. And I sat down to watch a transformers based show with my son and some of the transformers were dinosaurs now. So if I hadn't had that experience of watching transformers today, we might both be talking about transformers him and I and talking about very, very different things.

And we've noticed this through doing interviews that collect qualitative data about some of the things that we would just take for granted in our participants' life. But when you are doing longitudinal research you are constantly grappling with wanting to ask the same question

over time with thinking conceptually, theoretically, but also testing in various ways, is the same question legitimately the same question ten years later as it was before.

PB The issue we've got is different. Because our cohorts, unlike yours, we've got multiple cohorts that are 'Growing up in Scotland', the two that we are running at the moment are actually only six years apart. And we find that although they have been set up to look at differences between children growing up in different periods. Six years, not a lot has changed in some of the things that we are interested in looking at.

But actually, essentially longitudinal data is simply data which is collected over time. And I certainly know of studies that have collected longitudinal data using text messages over the course of a day. So that's a very short time period, but nevertheless it is tracking changes in a person's behaviour or their feelings or their situation over a period of time and therefore it's longitudinal data and it's still different from asking them from one point in time. And it can be done very simply and very quickly, but nevertheless create quite a powerful and unique longitudinal data set.

So I think it's important that people can remember that longitudinal data isn't just about big studies tracking people over fifteen years. And it can be done and applied very usefully to explore other research questions.

DW It's a very broad church. And I've also seen some really elegant, beautifully designed, very small numbers qualitative, longitudinal studies over a couple of years that really picked the right comparisons to make between people or situations or organisations that are much more manageable for an early career researcher or a PhD student than some of these studies that unfold over decades.

But there is a lot out there that is really waiting to be fully used and utilised. And it's insights into the human experience to be properly brought out. But there is all this data out there and teams working on things that you can look to make connections with and work with. And often people are very interested in getting others involved to work on parts of the data, and look at new questions because it can be hard to keep up when you are working on these larger projects.

PB We've had PhD students who have collected data in addition to the data that they are using from our survey appending themselves to our team in a sense. Our team that is running this huge piece of work that is, that actually benefits from having this supplemental high quality qualitative data, exploring areas that we have been unable to explore as part of the main project.

So there are definitely ways to take advantage of these existing data sets, existing studies and adding to them, just a small amount of data, but to create a much bigger and powerful piece of work.

DW Yes, and a richer picture and understanding of whatever it is that that research is investigating, definitely.

Contributors:

Dr Paul Bradshaw is Head of ScotGen Social Research, the Scottish arm of NatGen Social Research (webpage: <http://scotcen.org.uk>)

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Further information:

People wishing to follow up on the Growing Up in Scotland study should visit the website www.growingupinScotland.org.uk

People wishing to follow up the Life Patterns study should visit the website http://education.unimelb.edu.au/yrp/projects/current/life_patterns

Suggested questions for seminar discussion:

What can longitudinal research tell us about the significance of people's childhoods for their trajectories as adults?

Why is the problem of attrition in longitudinal research so important and what can be done to reduce it?

What ethical issues arise in longitudinal research involving children and young people?

Why might it be necessary for a question asked in a previous round of a longitudinal study to be changed?

For what sorts of things might it be appropriate to collect data at points a long time apart, and for what things might collection of data at shorter intervals be more appropriate?