# Getting Personal: Research into Adults' Maths Life Histories

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## Introduction

The idea for our research into adults' maths life histories arose at the first meeting of ALM in November 1993. For many years Diana had recorded interviews with friends and colleagues about their experiences of mathematics, but this had remained an essentially private activity - serious but unsystematic - and without what Mrs Thatcher called the "oxygen of publicity" it had not developed. We discovered that this was an interest we shared, and so began the glimmerings of a joint research project. After several discussions we began to see how we could establish a project that would enable us to develop our interest in a more rigorous and systematic way.

The first step was to identify possible sources of funding. It is important to establish a track record when bidding for other people's money, especially as this is a new area of research, so we put in a bid to the College for a small pilot project to be run in conjunction with the University Careers Service, while continuing to develop other bids. Our bid to the College was successful and the pilot begins in September when we shall be interviewing mature students about their maths life histories and their perceptions of the effect of their mathematical experiences on their career and life chances. In the meantime we have been refining our methodology and undertaking trial interviews with volunteers of both sexes and from as wide a variety of ages and backgrounds (educational, linguistic, cultural etc.) as possible.

Our methodology is qualitative and non-observational (McKernan 1991) and our main research tool is the semi-structured interview augmented by subjects' own narrative accounts (Spradley 1979, Densin 1978, Schatzman and Strauss 1973). We chose this because it enables us to maintain points of comparison between subjects while engaging in in-depth open-ended conversations.

Our interviews so far have thrown up some unexpected and fascinating insights into adults' experiences of maths - like the woman who was given a calculator as a leaving present by her (adult) student because he did not approve of her working out weaving calculations in her head, or the man who never progressed beyond adding and subtracting at school, and yet is clearly using more sophisticated mathematics in his work as a harness maker and as a labourer in the building trade.

We have been agreeably surprised that people have been so willing to talk about their maths life histories. Nevertheless, we have found it difficult to get people to talk about their more recent mathematical experiences.

## The Activity

We wanted the seminar group to gain some insights into our project and to help us to take our research further so we asked the participants to interview each other, using an extract from our draft interview schedule (see below). They worked in pairs and we allowed 20 minutes for this - 10 minutes per person. Each pair then had 5 minutes to jot down points, issues and comments to bring back to the whole group. We wanted to keep the interview schedules and the participants' notes on them, so unless they wished to identify their contribution, individuals were not required to do so.

## Outcomes

There was a general feeling that the group had been 'thrown into the activity' and some people were initially 'stumped' by some of the questions. By contrast, our interview subjects have all had the opportunity to talk to one of us about the project and everyone has received a letter prior to the interview describing the research and giving ground rules and guidelines about the interview. This is because we wish the interviewee to be as well informed as possible and to feel able to respond only to those questions he or she wishes to answer. We agreed that it might have been helpful had it been possible for the ALM conference participants to have seen the extract of the interview schedule before and that, had they done so, they might have produced different responses. We also recognised that the first interviewee's responses might influence the second interviewee.

Some members of the group had not thought about questions of this sort before and said they would have liked more time to talk and think about the questions. It was considered that the interview schedule was cognitively demanding but generated new and interesting ideas. It also assumed that each participant had a good memory!

Several issues concerning language were raised in the lively discussion after the interviews. How do interviewees translate the language of researchers (for example `space and shape') into the context of their own lives - for example, that of gardens? There was discussion of the difficulty of finding the vocabulary to describe feelings that were evoked when talking about past mathematical experiences. It is interesting that maths is a subject which does evoke much emotion - but has traditionally been seen as not involving the affective domain. The question of fluency of language was raised and concern expressed that some interviewees might have difficulty in communicating their thoughts. So far we have not found this to be the case - in fact quite the opposite.

Members of the group perceived themselves responding in dual roles, one as `professional mathematician' or `mathematics educator' and the other as `in everyday life'. There was also consideration of the influence of economic and personal circumstances affecting the view of estimating and approximating, for example, if you have little money, estimation of bills is not an option. The circumstances in which calculations are performed may affect how they are done

- under pressure, for example, you might use a calculator when in other circumstances you might use your head (Buxton 1981, Maxwell 1989).

Some of the categories used in the interview schedule which are taken from school mathematics tended to focus the interviewee's attention on the school context and it was suggested that we could avoid this domination by contexting the questions; thus grounding the interview more effectively in everyday life.

The layout of the interview schedule and the format of the questions were discussed and many helpful comments made which we have incorporated into the next version of the interview schedule. We know we are never going to have the perfect interview schedule but developing our work in the light of such comments is an important part of the research process.

Some of the participants' comments were predicated on the difficulty they expected we would find in getting people to talk to us. On the contrary, we have had no problem getting people to talk - rather we have had a queue of people wanting to talk to us. We have also had to devise strategies for keeping to our one hour time allowance as once people start to talk about heir maths life history they seem to want to carry on. Many interviewees have commented that they are saying things they have never said before: a comment echoed by several ALM participants.

Certainly the ability to transfer knowledge from one context to another seems to be a key issue (Zaslavsky 1994). We are concerned about the issue of labelling 'mathematical' what the interviewee sees as maths-free. This could be seen as patronising, our definition carrying more weight than the interviewee's.

## Conclusion

Our work so far has confirmed for us the importance of adults' maths life histories and we are keen to continue to investigate these, particularly with respect to those areas of adults' lives which they do not immediately identify as mathematical.

Working together has been a thoroughly positive, synergetic experience for us both. It is a great pleasure to discuss the latest interviews, reflect on the process and consider ways of improving it, pass on interesting articles and other pieces of information to each other. The fact that there are two of us has also enabled us to encourage each other and remain motivated through the (at times) hard slog of preparing research bids. Nevertheless, we have enjoyed focussing on different aspects of the field in order to tailor our research bids to the requirements of the various funding bodies and we are currently exploring the possibility of joining with colleagues on a large bid which would include aspects of our research into adults' maths life histories.

We have been delighted with the interest aroused amongst our colleagues at Goldsmiths, elsewhere in the UK and further afield. As a result we are giving several conference papers on various aspects of our research and plan to write about it for publication. All this has given us the chance to discuss our ideas with others and to respond to challenges and insights from a range of different perspectives, none of which would have happened without ALM.

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