one
INTRODUCTION

I usually start with this simple process:

- Research – empirical data:
  - quantitative (numbers)
  - qualitative (not numbers – mostly words)
- Then I discuss each of the terms, with some context and related points, thus:

  Research – point out that it is systematic, organised, thorough:

  - research is 'organised common sense'
  - research is the way of solving problems and answering questions in the modern world.

  Thus, research saturates our world (see section 1.3) but it wasn't always this way.

  Empirical – emphasise the importance of this term:

  - a class discussion of what it means is often very useful
  - there are big misunderstandings of this term – especially that empirical means quantitative or statistical or numbers (it doesn't, but it includes numbers)
  - there was emergence and widespread acceptance of the philosophy of empiricism only some 350 years ago, thus relatively recently in human intellectual history
  - empiricism is the philosophy behind the scientific method
  - science is of central importance in today's world – science is our way of building knowledge (cf. earlier times or other societies today)
  - science can only answer empirical questions, however not all questions are empirical questions – some of the most important questions are non-empirical, therefore science cannot answer some of the most important questions
  - What is an empirical question? How do we know if a question is empirical? Answer: A question is empirical if we can say what data we will need to answer it. This is the empirical criterion for research questions (see section 4.1). I use the example of this question: 'What is the meaning of life?' The question is:

    (a) extremely important – individuals, groups and societies have to come up with some answer to this question, and wars have been fought about it

    (b) not empirical – we cannot say what empirical data we would need to answer it. Thus, it is not a scientific question, at least not in this form. There are many such questions which are important but non-empirical.

Note, however, that a simple modification can turn it into an empirical question, thus: 'What does some identifiable group of people think is the meaning of life?' (e.g. teenage girls in the UK, or Buddhists, or atheists, or people born in country X, etc.). To answer this, we need to select some sample of the people we are talking about, and to work out how to question them, i.e. collect data from them – about their view of the meaning of life (which could be done qualitatively, quantitatively or both). This illustrates a process which often has to go on in planning research.

We need to check that questions we are proposing are empirical. Those that are not usually need further 'question development' work – see Chapter 3.

Data – talk about how a synonym of 'data' is 'evidence' – the word 'evidence' is used in a legal context, the word 'data' in a research context; 'data' is a very broad term, therefore I subdivide it into quantitative and qualitative (and a combination of the two):

- Quantitative means numbers – at this point, I would have class discussion around the question 'Where do numbers come from?' I want to make the points that: (1) the world does not occur in the form of numbers, that it is we as researchers who turn data into numbers, using the process of measurement to do so; and (2) that numbers therefore are not God-given but man-made, and that, as researchers, we face a choice about whether to turn data into numbers or not. This points ahead to the questions of what measurement is, and of when measurement is possible and desirable in research – this is dealt with in section 4.7 and Chapter 10.
- Qualitative means 'not numbers'. Mostly, for modern social science research, this means words. (But not always – for example, objects, artefacts, maps, pictures, etc. may be data for anthropologists, sociologists, psychologists. And today, increasingly, social scientists are using visual data of various forms). So where do words come from? Here, I use Wolcott's very tidy three-part answer:
    - from reading (documents)
    - from watching (observation)
    - from asking (interview).
- Combining quantitative and qualitative data – I point out that we unproblematically do this in our personal and professional lives, so why should the research world be any different? In doing this, I want to head off the irrational criticism that I still sometimes hear, that 'we should not combine the two types of data'. This all points ahead to mixed methods. Again, class discussion (with examples) of the ways in which we combine both types of data in everyday and professional life is useful.

Definitions

I find the two simplified definitions given to be very useful and my experience is that students do too, but it is important to stress that these are not full definitions. Note the introduction of the philosophical term 'paradigm', which points ahead to the methodological theory material in section 2.1.

The importance of research

This is an obvious point when we think about it, but we don't often think about it! It's amazing how automatic it is for our culture now to see research as *the* way we build knowledge, solve problems, answer questions, etc., whether for medical, social, educational or economic issues, etc. Examples are everywhere, and if class time permits, it is interesting to kick this around for a while. And it's always empirical research which is recommended, usually by implication (i.e. the word empirical itself is not often used, but it is what is meant). It is all the more important then that we build a broad understanding of what (empirical) research is and how it works.

It is interesting also, if time permits, to think back over human intellectual history and realise that science and empirical research as the way of doing things is a relatively recent development (though several older cultures and civilisations used it extensively), and that in some parts of today's world it is still not the accepted way. Kerlinger's chapter on Ways of Knowing is very useful here.

Model of research

I see this as centrally important, and I want students to be able to reproduce it at will, and to describe and explain it. To make sure of this is to make sure we are all 'on the same page' when talking about research, and planning it. Also, when the model is laid out vertically, it basically gives us the headings for a research proposal. I think the model is simple – as in easy to understand – but also robust and powerful – as in it works on a very wide variety of research situations and research types. I always make understanding of this model an absolute priority in my teaching, and sacrifice time on other topics if more time is needed on this.

Clearly, this model stresses research questions. The next section really says that the terms questions and problems are functionally interchangeable when it comes to planning and developing research, and therefore either can be used. I have found that students 'get it' better when I focus on developing research questions, starting especially with 'What are we trying to find out?'

Questions before methods

This obvious point needs reinforcing, especially for beginning researchers. I use this simple diagram:

QUESTIONS ⟶ METHODS

Because there can often be an influence of methods on questions, I then modify this by adding a smaller reciprocal arrow back from methods to questions, to give this diagram:

QUESTIONS ⟶⟵ METHODS

But I want to stress that the dominant direction of influence is from questions to methods, and that this is the way research should be planned and developed.

I single this out for two reasons:

1. Because of 'methodolatry' – as explained in section 1.6, this is a made-up word formed from the 'idolatry of method'. It is distressing how often in the research world we see someone learn a method and then plan research by trying to apply this method. Examples are common and occur both in quantitative and qualitative research:

   Quantitative example: I once asked a new graduate what he'd done in his doctoral thesis. His response was: 'I did a multivariate analysis of variance'. I asked about content – area or topic. He responded with method.

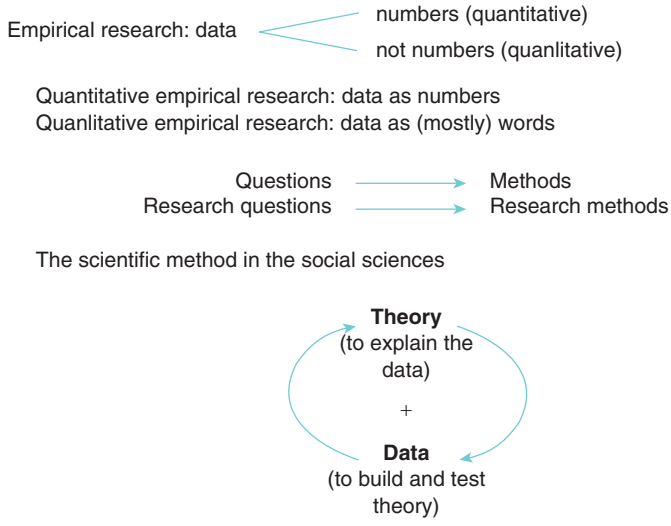
   Qualitative example (this particular example is common): I ask a qualitative researcher what he/she is researching. The answer is: 'I'm doing a grounded theory study'. Again, I asked about content; the response was about method.

2. Because beginning researchers are understandably anxious about what method(s) they might use in their research – and sometimes about whether there is a method for what they want to find out. Undoubtedly, the most common example of this is the student whose *first* question to me is: 'Should I do a quantitative or qualitative study?' I can of course only respond with: 'What are you trying to find out?' It is worth discussing this particular example in detail with the class, because it is so common (and understandable). 'Should I do a quantitative or qualitative study?' is a question about method. The response has to be about content – 'Let's find out what the research questions are first' or 'Let's work out what we are trying to find out'.

Regarding whether or not there is a method for what they want to do, my advice in the planning stage is to assume that 'there will always be a way to do what you want to do; we can work out exactly what this way is later'. We should not let issues of method crowd out issues of content in the planning stage. Issues of content are sorted out by developing research questions. Research questions come before research methods.

Science, the social sciences and social research

I think the main point to get across here is a basic understanding of what science is. I simplify it into two main parts – theory and data. Data we have spoken about already (based on 'real-world experience'), and science accepts the authority of empirical data. Scientific ideas are tested against data and scientific knowledge is built on data. But the focus on data is not the whole story. The job of science is not just to collect more and more data. It is to explain the data – in other words, to build explanatory theories (which are of course then tested against more data). These ideas are summarised in the following diagram:



This also introduces the central (but problematic) term 'theory' – one of the most confusing terms for beginning researchers. I simplify the matter by focusing on the central role of explanation in science, so that theory, for me, means explanatory theory. A theory explains (some part of) the data.

Two very well-known examples come from other areas of science and illustrate these ideas clearly:

1. The theory of gravity – which explains (among other things) why the object I am holding in my hand in front of the class will fall to the ground if I take my fingers away from it.
2. The theory of evolution – the so-called 'natural selection of chance variations' which explains why we have the life forms we see around us in the world today.

Again, I find it is worthwhile spending time on examples like these – especially the gravity example, because it is so well known and accepted. Pulling it apart shows how the scientific focus on explanation works.

Two themes

The remainder of this section makes the point that the social sciences seek to apply this scientific method (aiming for the development of explanatory theory tested against real-world data) to the study of human behaviour, which so often occurs in some sort of social context. This section also tries to show the very wide reach of the social sciences and gives a way of organising the different areas within the social sciences.

Two themes run through the way I teach the material of this first chapter and continue on as important themes throughout the whole book:

1. 'Demystifying' research (and some of its language) – one of my objectives in all of this early foundation content is to 'demystify' research for students. I often find beginning graduate students to be apprehensive (and worse) about the thought of the research they have to do. Sometimes they think that the research world is only for those of superior intellect and not for them. I want to show that, on the contrary, good research is within the capability of very many people, and that it really is (as Edison defined genius) '99% perspiration and 1% inspiration'. Careful, thorough, well-organised, logical, internally consistent, cohesive, etc. – these are the characteristics we strive for in our research students, and this is the 'perspiration' part. Of course, at the same time, nobody is against inspiration, should it appear.

   This is why I use the simplified definitions I do, and the simple but robust model of research shown. It is also why I want to capture as simply as I can the essential idea of some of the terms we use – thus empirical, theory, hypothesis, and so on. Words like theory and hypothesis are good examples. There are complicated half-page, long-sentence, big-word definitions of these things in the philosophy of science literature. In my teaching experience, when put in front of students, they obscure as much as they reveal.

2. Choices in research – a piece of research involves many choices, not only about topic (What will we study? What are we trying to find out?) but also about method. Choosing between quantitative and qualitative methods, or combining them, is one prominent example of methodological choice – but only one. There are many other choices required about methods, even after the topic and main methodological directions are set. I want students to understand this.

I also want my students to understand that there are no 'right and wrong answers' when it comes to these methodological questions. There are no 'answers in the back of the book', as I like to say (in a previous life, I was a secondary school maths teacher – very often, when you set students maths exercises, there *are* 'answers in the back of the book'). Choices need to be made on a logical basis with a premium on internal consistency, after full consideration of alternatives, and then the choices need to be defended (as appropriate). Two things follow from this:

- All research can be criticised; a different researcher might have done things differently, and there is no such thing as a 'perfect' (i.e. beyond criticism) piece of research.
- A researcher, who has made methodological choices after due consideration, should be able to defend these choices. At higher levels, for example at doctoral level, such defence is considered important. Indeed, in some universities, the final examination of the thesis is conducted orally, and is called a 'defence' of the thesis. But even at lower levels, where no formal defence may be required, this principle exists.