Doing psychological research
Gathering and analysing data
NICKY HAYES
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Introduction

The psychologist and the hamster

Many years ago, as a psychology student, I learned all about operant conditioning, which was very fashionable at the time. I learned how a hungry small rodent in a Skinner box would wander around the box, active because it was hungry, and would eventually press a lever, which would give it a food reward. Gradually, I learned, the animal would come to associate the two events – the pressing of the lever and the receipt of food – at which point it would approach the lever when it was hungry, and begin pressing. It all seemed very straightforward and logical.

In those days it was compulsory for BSc psychology students to undertake some coursework involving animals - not vivisection, but usually some kind of learning experiment. I was rather reluctant to do this, but wasn’t able to articulate why: the idea of ethical objections to ‘harmless’ animal coursework had not yet been voiced, and I only understood later where my own reluctance came from. Eventually, therefore, I found myself in the animal lab with two hamsters, charged with the task of seeing that they obtained their food by means of the Skinner box. The hamsters had previous experience, so didn’t have to learn the task from scratch. They had been reduced to four-fifths body weight to make sure they would be hungry, as per the textbook, and my task was to place them in the box, and record how they behaved.

The first hamster, it appeared, had been reading the same books as I had. It explored a bit, and then began pressing the lever, breaking off every now and again to nose into the food box. This rapidly produced the predicted response, and that hamster would hammer away on its lever throughout the experimental session, pausing now and then to eat, then going straight back to pressing its lever. So far, so good. I came away with a nice clear frequency chart, and an even clearer conviction that doing an animal experiment as coursework was just pointless. After all, we knew what was going to happen.
The second hamster, however, had other ideas. It wandered over to a corner of the box, curled up, and went to sleep. That wasn’t in the textbooks. According to everything I had learned, a hungry animal should get more active, not less. Occasionally it would wake up a bit, and wander around some more. I held my breath whenever it approached the lever, but no, the excitement of perambulating was evidently too much, and it would go back to the corner for another little lie-down.

That set the pattern of its experimental sessions. I think that hamster pressed the lever about five times in total during a twenty-minute ‘training’ session, and of course, that wasn’t enough to get any reward. Its body weight was re-checked, and it was definitely hungry; but there was no way that hamster was going to press that lever twenty times just for one measly food pellet. After four days, the experimenter (not me, I was just the assistant) dropped it from the study.

That hamster taught me an awful lot. I still hold the view that using animals for coursework studies is unnecessary and undesirable, and I was very pleased to see that practice disappear over the next decade or so. On a personal level, though, I learned a great deal about the practicalities of real research. Like many young people, I was inclined to see the world as being much more straightforward than it really is, and I believed that both people and animals acted for the most part in ways which would conform to straightforward, logical rules. That hamster showed me that reality was rather different. Even small rodents sometimes don’t act predictably. So it wasn’t surprising that people, too, don’t always act according to expectations.

The need to do research

All psychology qualifications involve learning how to do psychological research. Sometimes it seems a bit of a waste of time. Why spend time conducting elaborate studies of things that seem obvious? But, as that hamster showed me, actually doing research is very different from just learning about it. If we only learned about psychological research, without actually doing it ourselves, we’d end up with a perfectly logical, highly idealised idea about how people work. But it’s unlikely that our ideas would correspond very closely to reality. Real life is more tricky than that.

Actually, what I have said applies to other sciences as well as to psychology. Psychologists often have a very idealised view of the physical sciences - being slightly envious of the fact that their subject matter doesn’t talk back. But when you actually get down to doing real research, you find that the physical world, too, doesn’t always operate as predicted. During the years, I have worked with metallurgists, physicists and chemists, and I have always been amused by the contrast
between the psychologist’s idealised view of that type of research, and the uncertain, probabilistic realities of doing it. Real life is really tricky!

That said, psychology does have to take some special precautions. We all feel as though we have some understanding of other people. After all, we deal with them all the time, and we are learning about others from the moment that we’re born. But that very experience shapes our beliefs and assumptions, in ways that we aren’t aware of. It is much too easy to conduct a psychological study which only allows us to find out what we expect to find - not to mention the fact that our research participants have expectations too, which influences their own behaviour. A great deal of what we have to learn about psychological research is about ways of acknowledging these influences, and dealing with them - either positively, as factors which will enrich our knowledge, or negatively, by trying to rule them out.

The power of the paradigm

Scientific research doesn’t take place in a vacuum. Ever since human societies first began, people have developed explanations for why the world is like it is. What we know as science operates with a particular set of explanations, which are largely accepted by the scientific community of the time. Those explanations change over time - sometimes dramatically, sometimes gradually - but at any given moment they set the framework for making sense of scientific findings. In the Middle Ages, it was the phlogiston theory which was used to make sense of observations about heat and light, and the Theory of the Humours which made sense of observations about human personality. These theories rested on assumptions about how the world worked, and what counted as evidence, which were very different from modern ones.

Modern paradigms are very different. We make very different assumptions about how the physical world works, and about the functioning of the human body. But, like their predecessors, modern researchers look at their research findings in terms of the accepted paradigm of their own scientific community.

The hamster, you may recall, was dropped from the experiment. No way was its behaviour going to contaminate the actual learning experiment which was going on. And that was another lesson I learned: just how powerful a paradigm can be. The experimenter concerned was operating within a very specific experimental framework, which made very definite assumptions about how the world worked, how animals behaved, and the nature of causality. Taking that hamster’s behaviour seriously would have challenged that framework of ideas at its most basic level. And it was unthinkable that a whole scientific community’s assumptions and ideas should be challenged by the behaviour of just one small hamster.
Modern psychology is very different from the psychology of those days. At that time, psychology consisted of one or two large, dominant paradigms, with minor challenges coming in from other directions. Nowadays, in common with the changes in society as a whole, the discipline is far more pluralistic. Psychological research takes a lot of different forms, and there is more than one generally accepted methodology. In this book, we are going to look at several different ways of going about psychological research. Each of these approaches has developed over time, and each has contributed in its own way to the whole sum of modern psychology.

Although any one psychological investigator usually operates within a single main paradigm, psychology itself contains more than one. The fundamental assumptions of approaches such as discourse analysis are very different from those of the hypothetico-deductive experimental tradition, and rest on very different ideas about the nature of knowledge. We will, in this book, be taking samples from several approaches to psychological knowledge. Taken as a whole, they represent some very different ways of going about collecting evidence about what people do. And as a result, I hope that you will be able to gain a full and well-rounded picture of the range and depth of psychological research.
There are quite a number of things which make psychology rather a special sort of science. One of them is its very broad range - from the action of single nerve fibres, to the beliefs of large social groups. Another is the scope of its application: psychology has something valuable to contribute in just about any area of human endeavour - something which psychologists themselves are only just beginning to grasp. And the third is the diversity of its research methods. Psychologists draw on a much wider range of research methods than any other science: from precisely measured and highly controlled laboratory investigation to large-scale action research projects in organisations.

What brings all of these together, as part of the same academic discipline, is the way that psychological knowledge is based on a rigorous and careful collection of evidence - in short, on scientific research. All applied psychologists, no matter what area they are working in, apply psychological knowledge which is based on rigorous and careful research; all research psychologists aim to ensure that the methods they are using are systematic and relevant to the phenomenon they are investigating.

It is psychology’s underpinning of scientific investigation which draws psychology, and psychologists, together. And it is for that reason that a sound knowledge of psychological research is an essential part of any psychology student’s education in the discipline. This book is designed to provide a basic grounding across the range of psychological research.

In the first part of this book, we will be looking at the process of gathering data. Psychological data can take lots of different forms, and the type of data you gather really depends on what type of psychological event you are interested in - and the level of analysis you are concerned with. You might be studying how the brain works, but if
you’re interested in looking at how people recover from brain injuries, then the type of data you collect is at a different level from the data you need if you are interested in how individual brain cells function. Similarly, if you are interested in why some people always seem to succeed while others usually fail, you’ll need to collect a different type of data than you would if you were looking at the social skills which make someone popular with their peers.

These examples are all about different levels of analysis. If we are trying to understand human beings, we can’t do it just by focusing on one level, and ignoring the rest. That was the mistake that the behaviourists made – they believed that associative learning would tell them everything they needed to know about human psychology, since (they thought) human experience really consisted of chains of stimuli and responses. So they believed that a full understanding of stimulus-response learning would be the key to understanding human behaviour in all its different forms.

But it doesn’t work like that. Understanding the basic elements of a cake only tells us what the cake is made of. It doesn’t tell us what it is used for, or who is likely to eat it, or why it was made in the first place. There are what we call emergent properties which come into being as soon as different elements are combined. They are called ‘emergent’ because they emerge from the combination: they aren’t there in the elements. The symbolic nature of a birthday cake, for example, isn’t there in the elements of flour, sugar, etc. It only emerges as a property once those elements have been transformed into a cake.

Similarly, understanding how human beings learn doesn’t tell us everything about human beings – there are other levels of analysis which are just as important, like the study of cognitive mechanisms, of social interaction, of cultural beliefs, of developmental processes, and so on (see Figure 1.1). Any one researcher usually operates at just one level of analysis, but most psychologists are aware that psychology is a broad discipline, and that psychological investigations can take place at any level.

The aim of this book is to introduce the main ways that psychologists go about doing research. There are two sides to this: firstly, collecting the information – the data – that we need; and secondly, making sense out of it, so we can understand what it means. So in the second part of this book, we will go on to look at how psychologists make sense of the data that they have obtained. There are two broad distinctions here: quantitative analyses, which involve analysing data using numbers and statistics, and qualitative analyses, which involve...
The scientific method

analysing data by looking at their content and meaning. Part II will allow us to explore a number of different ways of doing both quantitative and qualitative analyses.

The idea, then, is that the book should give you a pretty fair idea of some of the many ways that psychologists go about gathering data. No individual psychologist would use all of these methods – instead, a psychologist chooses research methods which are appropriate to the topic that is being investigated, and the level of analysis in which the investigation is located. But equally well, it is a rare psychologist who only uses one research method in their work, and no more. Having a range of research techniques to draw on is important for any psychologist, because only that way can we make sure that the methods we are using are appropriate for the problem that we are investigating.

The scientific method

Psychology, as we have seen, adopts a scientific approach to its knowledge base. But as you will have gathered by now, there are a lot of different ways of doing science. Although you will often hear researchers talk about ‘the scientific method’, the truth is that there isn’t just one single way of going about doing science. Scientists approach their work in different ways, depending on the material that they are investigating. Some scientists, such as chemists, are able to manipulate substances in the laboratory. Others, such as astronomers, don’t have that option. Some scientists operate by deduction based on observations; while others are able to set up changes to conditions and see what happens as a result.

Figure 1.1  Levels of analysis in psychology

- cultural and historical
- socio-political
- subcultural
- social cognition
- social networks and groups
- interpersonal interaction
- intentions and motives
- cognitive processes
- habits and learned associations
- emotions
- genetic/evolutionary
- physiological
- neurological
- biochemical
Hypothetico-deductive research

The approach which is most commonly accepted as typical of ‘the scientific method’ is also known as the hypothetico-deductive approach. It involves testing hypotheses – predictions about what will or won’t happen if a particular theory is true – and making deductions from the results of those tests. Figure 1.2 shows the cycle of the research process which occurs in hypothetico-deductive research.

The first stage in hypothetico-deductive research, then, is the formulation of a theory. A theory is an explanation for a set of observations, which have usually been obtained from other research, but might also have been picked up informally. If it is a scientific explanation, it will be possible to use that theory to make a number of predictions about what will or won’t happen in a given situation, if the theory is true. A prediction of this kind is known as a hypothesis.

The hypothetico-deductive approach involves setting up a research process which allows a researcher to test a hypothesis – that is, to see whether the prediction really does come true when it is checked out in reality. The research process might be an experiment, an observation, a survey, a case study, or some other recognised way of gathering and evaluating data. By testing the hypothesis, it then provides some more observations. If these turn out to be the kind that the theory predicted, we take them as support for the theory. If not, then assuming that the research was well designed and carried out rigorously, we take them as challenging the theory and suggesting that some other explanation is needed.

In reality, of course, it takes more than just one set of challenging results to challenge a whole theory. Scientists work within a generally accepted framework of ideas, known as a paradigm, and it needs quite
a lot of challenging observations to come up before a whole paradigm is rejected. But the cyclical nature of hypothetico-deductive research means that data are continually being collected, and theories are continually being refined as the body of observations grows.

**Inductive research**

Inductive research, on the other hand, doesn’t begin with a theory and the construction of testable hypotheses. Instead, it begins with the collection of data, so that the research has a set of observations to interpret. Much of our knowledge of how the brain works, for example, began with psychologists and neurologists collecting data about odd things which happened when brains were stimulated or damaged, and using those observations to formulate theories about what was going on.

The process of inductive research, then, begins with data collection and uses the information derived from the data to formulate a theory. As you might imagine, it is particularly useful when psychologists are beginning to investigate a new area, and it provides a theoretical framework which can then, if it seems appropriate, be investigated using the hypothetico-deductive approach. Figure 1.3 illustrates the inductive approach to research.

![Figure 1.3 The inductive research cycle](image)

The inductive and hypothetico-deductive approaches can both involve a variety of research methods for collecting the data, and a variety of analytical techniques, although some are more suitable than others. Experiments, for example (Chapter 3), assume a hypothetico-deductive approach, while grounded theory (Chapter 11) assumes an inductive one. But observations (Chapter 4) can be used in either hypothetico-deductive or inductive research, and so can most other research techniques.

**Positivism and anti-positivism**

These approaches to research have relevance for another distinction which is sometimes made by social scientists, and has become increasingly relevant in modern psychology. This is the distinction between
Table 1.1 Four features of the positivist approach to science

1. It emphasises particular assumptions about causality: that causality is inferred by the human senses when particular events are seen as occurring together in space and time, and that causes are replicable.

2. It emphasises a belief that the observer is completely independent of what is being observed.

3. It holds an ideal of scientific knowledge as being value-free, and as occurring independently of culture and the social context.

4. It maintains that all sciences can and should be conducted by the same overall methodology.

Positivism is an approach that distinguishes between the ‘positive’ data of sensory experience, and what is referred to as ‘transcendental’ (that is, going beyond the data) speculation of various kinds. Positivism insists that only that which can be directly observed and measured counts as knowledge, while any other kind of information or approach to evidence is seen as being unscientific. Accordingly, positivist approaches to social science reject the idea of mind as an important influence in understanding social behaviour, and tend to ignore symbolic or communicative levels of explanation. Some basic assumptions of positivist research are summarised in Table 1.1.

The term is often used interchangeably with the term empiricist, because they have quite a lot in common. Empiricist approaches take the view that valid knowledge comes only from the kind of experience which can be directly perceived through the senses; other kinds of knowledge are seen as inferior and misleading. In the social sciences, positivism tends to be linked with the hypothetico-deductive approach to science, which we will be looking at later in this section; although some researchers see it as possible to use hypothetico-deductive approaches in other contexts.

The positivist approach takes as its model the methods used in the ‘hard-core’ sciences of physics and chemistry, and much of the opposition to positivism in social science stems from the idea that human beings are fundamentally different from metals or chemical elements. Human beings have thoughts, ideas and cultural expectations, which influence their behaviour so much that there are some who see positivist ideas as being completely inappropriate in human or social sciences. These researchers adopt an anti-positivist approach.

Anti-positivism is sometimes known as ‘interpretivism’, or ‘the social action approach’. It originated from a number of German philosophers and social scientists writing at the end of the nineteenth
The scientific method

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<th>EXERCISE 1.1</th>
<th>Levels of explanation</th>
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<td>The following are all studies of vision or visual perception carried out by psychologists. Arrange them in order of the level of analysis which they adopt.</td>
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A study of the perception of line drawings in traditional African societies

A study of the perception of vertical lines in kittens reared in a restricted environment from infancy

A study of the way that brain cells fire in response to lines at different angles

A study of the smallest amount of light which the human eye can detect when fully dark-adapted

A study of colour perception and colour naming among people of different cultures

A study investigating how human vision can adapt to upside-down goggles

A study of perceptual closure, showing that we see complete shapes even if we are shown partial ones

A study of visual illusions produced by simple line drawings

A study showing that some people give false judgements of line lengths if the correct judgement would set them against the group

A study of eye-colour inheritance in particular families

A study showing that prejudiced people perceive more exaggerated differences in drawings of people from different ethnic groups than non-prejudiced people do

A study showing that the wording of a question can affect whether a line drawing is perceived as a rabbit or a duck

century, who emphasised that it was important to distinguish between the human/cultural sciences and the natural sciences, on the grounds that the two were concerned with fundamentally different forms of knowledge. The natural sciences were concerned with finding causal explanations for external events, while the human sciences were concerned with grasping the meaning of the individual’s experience of and in the world.
The approach put forward by Weber and other like-minded social scientists of the time became known as *Verstehen* (which is German for ‘understanding’). This involved an interpretive treatment of social and cultural events, adopting an approach which concerned itself with understanding rather than with simple ‘objective’ approaches to causality in human behaviour. As such, it represented a direct contrast to the increasing emphasis on quantification, prediction and causality which was developing among positivist social scientists, and the development of Verstehen became an initial stage of anti-positivism as a movement.

Anti-positivists see social reality as consciously and actively created by individuals. Rather than being something which has an ‘objective’ existence, it is directly produced by the people who participate in it. Accordingly, to treat social life, or human beings, as ‘things’ to be studied is seen as misleading: it is forcing it into a category which it simply doesn’t belong to. Human social life, according to the anti-positivists, is not an objective event: it consists of meanings and of intentional participation. Studying it as if those meanings didn’t exist, or were just a by-product of behaviour, produces a distorted picture.

Anti-positivism emphasises a phenomenological approach to understanding people. That means that in order to catch the meaning of a social event, we need to look at it through the eyes of the people actively involved – to see it as they see it. This means in turn that the social scientist must be receptive to people’s own ideas and explanatory frameworks; it means that it is inappropriate to formulate hypotheses in advance, because that is imposing an explanation beforehand; and it also means that the idea of the sociologist being the ‘expert’, and having superior knowledge of the social event being studied is inappropriate.

These two approaches to science are both reflected in modern psychological research. There are psychologists who stick rigidly to one side or other of the debate; but psychology is a pretty pragmatic discipline, and most psychologists are eclectic – that is, they use a mixture of approaches depending on what seems to be most suitable for what they are doing.

### Nomothetic, idiographic and hermeneutic research

One of the most tricky aspects of psychological research is the way that what the psychologist is investigating is able to think, change its behaviour, and interpret social meanings. For this reason, different areas of psychology adopt different methods for their research. All of them emphasise the importance of rigour and systematic investigation; but they go about doing that investigation in the way that is most appropriate for the phenomenon that they are exploring. Despite the
diversity, though, it isn’t just an amorphous mass. We can identify three major perspectives in psychological research, which are generally referred to as nomothetic, idiographic and hermeneutic.

The nomothetic approach is concerned with identifying general laws about human behaviour (the name comes from the Greek word ‘nomos’, meaning ‘law’). The idea is that discovering laws about human behaviour will allow researchers to make predictions about how people are likely to behave in a given circumstance. As a result, psychologists who engage in nomothetic research often use statistical methods which allow for, and average out, human variation. They take group measurements, looking for general differences between groups rather than individual idiosyncrasies. They also have to pay a great deal of attention to issues such as sampling, which we will be looking at in Chapter 2.

In contrast to nomothetic research, idiographic research is concerned with exploring uniqueness – what makes a person distinctively individual. So idiographic research concerns itself with fewer cases, and looks at them in more depth. Sometimes, this means detailed interview studies probing an issue in detail; sometimes it means single case studies using a variety of different approaches to explore a particular type of experience. Idiographic researchers don’t rule out the identification of general principles; but they go about looking for them in a different way. The idea is that gaining a thorough and more subtle understanding of just a few people will lead to more general understanding of others.

The third approach to research is known as the hermeneutic approach. Hermeneutic research is concerned with meaning – the meanings in social living, the meanings we place on our experience, the meanings we encounter during everyday life. Meanings occur on a number of levels: conscious, unconscious, personal, social, cultural and socio-political. Hermeneutic researchers investigate how people interpret their experience, and how various forms of symbolism are used to convey meaning in human life.

Each of these perspectives goes about studying human beings in a slightly different way. They ask different questions, and utilise different research techniques. For example, the nomothetic approach tends to emphasise the general similarities of human beings, and looks for cause-and-effect mechanisms in human behaviour. The idiographic approach, by contrast, emphasises uniqueness, exploring the way that each individual person, or each social situation, is distinctive and special. The hermeneutic approach takes a third route: examining the symbolic nature of much human experience, and attempting to understand human behaviour in those terms. It is primarily concerned with the meanings of human behaviour, and the way that our understanding of those meanings shapes and colours human interactions.

**What do these three terms mean?**

- nomothetic
- idiographic
- hermeneutic
The evolution of psychological research

The three different perspectives in psychological research have largely come about because of the way that psychological methodology has evolved. Psychology has gone through many different phases in its history, and each of these has left its mark on psychological methodology. In the earliest days of psychology, for example, psychologists used qualitative methods almost exclusively, and some areas of psychology such as clinical neuropsychology continued to use it throughout the whole of the twentieth century.

For many psychologists, though, the behaviourist influence which dominated experimental psychology in the middle of the twentieth century left a powerful legacy of prejudice against qualitative methods. The behaviourist school was intolerant of many aspects of psychological knowledge. In fact, it was a classic example of a modernist theory, promoting what it regarded as the one ‘scientific’ approach for all of psychology, ignoring the past, and rejecting all other approaches as inadequate or unscientific.

For example, the behaviourists dismissed psychological research into the workings of the mind – what we now know as cognitive psychology – because they argued that the mind could not be observed directly, and was therefore not open to scientific investigation. The existence of the mind, they argued, was always inferred from behaviour, and it was behaviour which psychologists should be studying.

As the century progressed, psychologists gradually managed to break free from this approach. They demonstrated that it was perfectly possible to study mental attributes scientifically (although they did call them ‘cognitive’ attributes, rather than ‘mental’ ones, to avoid association with the behaviourists’ earlier diatribes against ‘unscientific’ research). By the 1980s, cognitive psychology had become a thriving, even dominant, part of the psychological mainstream.

The behaviourist legacy worked on many levels, though. Obvious influences like that could be recognised and challenged. But their methodological approach was more insidious. Even after behaviourism was no longer regarded as a major influence in psychology, the behaviourist view that only numbers and quantitative analysis were appropriately ‘scientific’ remained. It didn’t matter that lots of the other sciences used qualitative methods of analysis: the behaviourists had taken physics as their ideal science, on which psychology should be modelled, and for them this implied that all scientific analysis should take the form of numbers.

This wasn’t the case across the whole of psychology: psychologists studying brain functions or other clinical projects often used qualitative analysis, and so did studies of child development. But mainstream psychology became dominated by the idea that only numerical results
Rigid assumptions

The behaviourist insistence that only quantitative data counted as valid created a stranglehold on many research projects. One of the most dramatic examples was the effect it had on the research into Genie, the child who was found at thirteen years of age without any language experience. The researchers conducted a tremendously detailed study, collecting many hours of video- and audio-taped recordings, and looking at the way that Genie’s linguistic and social development was progressing as she became accustomed to her foster-family. There were many dramatic changes, as she gradually learned the basis of social functioning, and developed some language abilities. But the data the researchers collected were all qualitative, and they had very few options for converting them into numerical data which could be analysed statistically (Curtiss 1977).

As a result, the researchers were unable to demonstrate ‘scientifically’ how the project was progressing, and how much they were learning from it. In a modern research project, they would have had no problem demonstrating Genie’s progress, but this was the late 1960s when the behaviourist influence was at its height. The funding for the research project was ended because of the perceived lack of results, and Genie was returned to the care of the social service department. They placed her in a situation where she was again subjected to physical and social abuse. All the linguistic and social progress she had made during the two years of the research project disappeared. She deteriorated rapidly, and died a couple of years later.

The evolution of psychological research

were really scientific, and that other types of information shouldn’t really be regarded as valid at all.

Over time, however, the narrow ‘quantitative only’ approach became whittled away, as psychological researchers recognised that there was more to understanding research outcomes than numbers alone. Cognitive researchers began to use techniques such as protocol analysis, which is a form of qualitative analysis that we will be looking at in Chapter 13, to explore the ways that research participants reasoned as they carried out problem-solving tasks; and other psychologists too began to ask their research participants questions and take into account how they were thinking about what they were doing.

There were several major sources which encouraged these developments. One of them was the advent of explicitly feminist psychological research in the late 1980s. The feminists challenged the conventional received wisdom of psychological methodology, arguing that it was positivistic and sterile, and emphasising the importance of human
meanings and experience for psychological research. The exemplars given by feminist researchers showed those psychologists who were open to the new ideas how such research could be both rigorous and meaningful, without having to depend on statistical number-crunching for its rigour and academic acceptability.

There were other pressures, too, which were developing in psychological research. One of them was for an increased recognition of ethical issues, and the way that these required researchers to stop regarding their research participants as material to be manipulated, and to begin regarding them as human beings with the right to make their own choices. This recognition of choice led investigators to begin seeing research participants in a different way, and that led to a need for data-analysis techniques which could respect research participants as human beings with ideas, opinions and emotions.
The growing interest in ethical issues also led to the development of guidelines and principles for psychological researchers. The conscious rejection of a researcher’s entitlement to manipulate the ‘subject’ without their consent led many to re-evaluate their research questions, and to adopt alternative methodologies such as account analysis, since these were more able to express respect for the participant.

Research funding, as always, played its part too. Psychological research projects became increasingly funded by agencies and commercial bodies, rather than by research councils, and this meant that researchers needed to demonstrate the real-world applicability of their research projects. Even the research councils began to emphasise commercial and social relevance to research funding, and, as a result, psychologists became increasingly interested in approaches to research which could be shown to be meaningful and relevant. There was a growing interest in ecological validity and real-world research, and that was accompanied by a recognition that qualitative methods were often more suited to real-world research projects than quantitative approaches.

By the 1990s, psychologists as a whole were beginning to recognise explicitly that qualitative methods could also be a valid approach to data analysis. A number of books and papers appeared on the subject, and various groups set about challenging the prejudice against this type of research on the part of the psychological ‘establishment’ – journal editors, PhD examiners and the like. The time was evidently right for such a development, because the progress was very evident. As we are seeing in this book, qualitative methods are now acknowledged as the other side of the psychological tool-kit. They work together with, and complement, quantitative analytical techniques, and in the rest of this book we will be exploring both.

Modern psychology, in my view, is reaching a very healthy situation. It has become able to encompass both research extremes, and a wide range of choices in between. In the first part of this book, we look at psychological research methods; but in the second, we will be looking at both quantitative and qualitative ways of analysing research data. For a student of psychology, just as much as for a research psychologist, the important thing is that the form of analysis should be appropriate to the data that have been collected and to the topic which is being investigated. And to ensure that is the case, all psychologists need be aware of a range of research methods and analytical techniques, which they can adopt if their material requires it.

In the next chapter, we will be looking at some of the specific issues which arise when we gather data as part of psychological research. We’ll be looking at the constraints of sampling; at problems of ecological validity and the ways that people act in accordance with what they believe the researcher wants of them; and, in particular, at the ethical challenges thrown up by psychological research.
Self-assessment questions

1. What is meant by the term ‘levels of explanation’, and how is it relevant to psychological research?
2. When might an inductive approach to psychological research be more appropriate than a hypothetico-deductive one?
3. What is meant by a positivist approach to research?
4. How do nomothetic, idiographic and hermeneutic research differ?
5. What problems can arise from adopting a strictly quantitative approach to psychological research?

Concepts in use

1. How might the concept of levels of explanation be useful to a group of research psychologists studying exam stress?
2. Describe a practical situation where the hypothetico-deductive approach would be the most appropriate way of conducting a piece of psychological research, and a practical situation where an inductive approach would be preferable.
3. Taking the particular topic of emotion, describe how a positivistic approach to studying it would be different from an anti-positivist approach.
4. Give a specific example of a nomothetic research study, a specific example of an idiographic research study, and a specific example of a hermeneutic research study. If you like, you can draw your examples from your knowledge of existing psychological research.
5. Imagine that you are conducting a major research project investigating people’s leisure activities. Give an example of one part of the project in which quantitative data would be most appropriate, and one part in which qualitative data would be preferable.