Introduction: Approaches to Data Collection and Data Analysis

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The Purpose of the Book

Doing social psychology research is a fascinating adventure. It is a route to understanding in a systematic way the individuals and the social world around you. It encourages you to ask and start to answer difficult but fundamentally important questions. What threatens identity? Why do people rebel? How are risks communicated effectively? How do leaders command? How are sexual relationships developed? How do minorities gain influence? How do people react under intense pressure? How do the mass media represent societal crises? How does the public behave when faced with a terrorist attack? The list of interesting questions is probably endless and the ones chosen as the priorities for research vary according to the values of the social psychologist involved, the availability of funding for the work and the theoretical preoccupations of the time. It is, however, true to say that in the main social psychology research is focused on issues that matter.

The interesting questions are invariably complex, usually even more complex than they appear at first sight. The prime skill of a social psychology researcher lies in refining the question and crystallizing out something that is capable of being answered. The second vital skill of the social psychology researcher lies in choosing from the vast arsenal of research methods that are available the one that is best suited to address the question posed. To develop this second skill,

it is necessary to gain a thorough understanding of all the tools that reside in the arsenal.

There are now many books to help students of psychology learn about the research methods they might use. This one is specifically aimed at undergraduates who want to learn about some of the data collection methods and data analysis approaches that are used in social psychology. It is not comprehensive in coverage of all the myriad methods used, but those selected for inclusion are very commonly used or they are methods that arouse much student interest. The selection is deliberately broad. The book is not designed to proselytize any particular epistemological orientation or set of methodological principles. It is designed to give the reader an opportunity to judge what a variety of methods can offer. Each is described in an honest and open way, and a real effort is made to explain its weaknesses as well as its strengths.

However, it is inevitable that any book on methods in social psychology will find itself drawn into the epistemological debates that have enlivened the discipline for at least 30 years. Questions emerge naturally about the feasibility of hypothesis testing, the value of experimentation, the limitations of measurement, the objectivity of data, the ethics of manipulation, the role of reactance to the process of research, the implications of sample structure, the pitfalls of prediction and so on. Here these issues are not extracted and dissected as formal philosophical problems. Instead, they are addressed as they need to be, embedded in the consideration of each of the methods.

This is not a book that is designed to explain the details of the various statistical techniques that can be employed. Where a statistical technique is the most obvious candidate for use, in combination with a specific research design and form of data collection, it is described here. However, the descriptions of statistical procedures are not meant to be stand-alone expositions. Some chapters are more elaborate and explicit about the statistics to be used than others. These tend to be the chapters where the technique of data collection employed is less important for the question posed than the way the data that are collected are subsequently treated. Essentially, in this book the reader is introduced to a statistical technique as an intrinsic element in the research method, rather than as an end in its own right. The chapters are designed to expose the logic that indicates which statistical test is best matched to the data collected. Understanding the assumptions that underlie statistical tests is often best achieved in the context of their repeated application. This book offers an opportunity to see

the diversity of approach to the use of statistics that exists in social psychology.

The Organization of the Book

Each chapter describes a method and illustrates how it can be applied to a particular research question drawn from the substantive topics that are typically included in current social psychology courses. The topics covered include identity processes, attribution, stereotyping, attitude change, social influence, communication, and group dynamics. The chapters provide a succinct overview of the theoretical arguments that surround the topic. In the main, this means that each chapter can be used as a discrete and independent basis for gaining an understanding of both the method and the social psychological problem to which it is applied.

The chapters are written by researchers well known for using the specific techniques they describe. The strategy adopted in inviting contributors was to seek them from UK institutions that are very active in social psychology research. Authors were asked to present the method and outline the design for an exercise that would illustrate its use – in the way they might for their own undergraduate students. This means that there is diversity across chapters in the approaches taken. Some are more heavily concerned with the philosophical and logical rationale underlying the method they describe. Others are clearly more concerned with the practicalities of executing the method rigorously. It is useful for undergraduates to be exposed to these varieties in emphasis; there are many routes to achieving a good understanding of a research method.

Most chapters include three broad structural elements:

- Description of the method and its applications – a succinct outline of the generic features of the method (what it is, how to do it, what it can be used for, its strengths and weaknesses), its links to particular theoretical models and exemplars of classic studies that have used it to good effect.
- Specific exercise – a description of a training exercise that can be pursued by the individual students or as part of a methods course; identifying a research question and showing how the method can be used to address it. It identifies step by step what needs to be done in order to utilize the method. The forms of analysis that might be used with the information collected are explained (if the

analytical approach is not already obvious because it is intrinsic to the method).
- Notes for course leaders – a brief description for course tutors who might wish to use the exercise of the assumptions it makes about the level of experience of the student, the time it takes, the materials needed, the preparatory reading required and so on. While this element of the chapters is directed at course leaders, it may be valuable for students as well, allowing them to locate the method within a matrix of real constraints.

However, each chapter takes on a unique shape and style. There is no excessive standardization of format across chapters since this can be boring and sometimes undermines the very real differences in approach included.

Some chapters address fundamentally the same technique (e.g. interviewing) but they do so from quite different perspectives or with different emphases. This is a valuable element of a contributed book on methods. The subtle differences between contributors in their representation of a technique highlight the need for students critically to evaluate assertions that are made about the characteristics of any method.

Some chapters are targeted at students who have had little previous research methods training. Others are more appropriate for students who have already been introduced to the basic techniques. Chapters are clearly categorized as introductory or more advanced so that the reader or course leader using them can be selective. The book is intended to be a useful resource throughout undergraduate studies. It could be used as the basis for developing expertise in social psychology research methods in short bursts but in a cumulative fashion throughout the full period of an undergraduate course. Equally, it could be used as the framework for a single intensive injection of methods within a brief but cohesive programme focused on social psychology.

Data Collection Methods: Elicitation and Recording

Data collection is in reality about two intimately connected activities: data elicitation and data recording. Data elicitation is about accessing the information, opening it up for examination. Data recording is about codifying the discovered information in a way that allows the research question to be addressed.

What is a data elicitation method? It is a way of getting information. So you could gain information by observing what people do (*observation*). For example, you could stand on a busy road with a machine that measures the speed of the motor cars that pass in order to determine the number of speeding offences on that road. Alternatively, you could gain information by asking people questions about what they do, think or feel (*self-report*). To extend the earlier example, you could ask people who drive along the particular stretch of road whether they ever exceed the speed limit on it and how often. Those questions could be asked verbally through some form of an interview or they could be asked in written form through some form of a questionnaire. The answers people are allowed to give could be open-ended (without any constraint imposed by you) or they could be structured to varying degrees (limited in format by you in advance – e.g. through the use of rating scales). Some methods of data collection involve no direct contact with the object of the research. These rely essentially upon archives (i.e. records) or artefacts as sources of data (*archival*). So, for instance, you might find out what people who are long dead were doing in the nineteenth century by examining archives reflecting their behaviour. For example, in order to understand something about family structures, you might look at parish records to determine how old people were when they married in the nineteenth century. To continue with the earlier example in the context of the use of archives, you could use criminal records of automobile speeding fines on the target stretch of road to quantify the level of compliance with road use restrictions.

Observation, self-report and archival methods of data elicitation dominate in social psychology. Most others are merely variants of these three prime types. They are essentially different ways of structuring the observation, shaping self-report or accessing the archive. For instance, face-to-face interviews rely on self-report but so too do self-completion questionnaires. Equally, the use of focus groups as a method of discovery relies upon observation but the measurement of physiological variation is also a type of observation.

The data that observation, self-report and archival methods reveal can then be recorded in many different ways. All three can be used to generate either qualitative or quantitative data records (and sometimes both at the same time). The form of the data is not intrinsically dictated by the method of data elicitation used. When you use observation you can choose to give a qualitative account of what happens or you can decide to report a quantified breakdown of what happens. For instance, you could observe the meeting of

two people in a railway station in terms of their demeanour, their movement to a table in a café, what they order to drink, whether they look happy when they part. Alternatively, you could decide to report how many times they touch each other and the interval of time between each such contact. The object in both cases may be to understand how people behave in public places and in both cases the data elicitation method is observation. However, one approach to recording the data is clearly qualitative and the other obviously quantitative. The dichotomy between qualitative and quantitative methods is not a division in the approach to data elicitation at the macro-level but a distinction in the way data are recorded and then subsequently analysed.

   Crucially, the way data are recorded matters. This is not simply because the way they are recorded will radically influence the way they can be subsequently treated (i.e. analysed, and this does not simply involve statistical analysis). It is also because the way data are recorded reflects the underlying theoretical and epistemological beliefs of the researcher. Differences in data elicitation methods are less revealing of these distinctions in belief than differences in data recording. Both Popperian hypothesis testers and social constructionists may use observation within the context of an interview but they are exceedingly unlikely to do the same things with the data thus collected. In learning about a method, it is always important to examine how data elicitation and recording may be related. All data elicitation techniques allow for a variety of recording methods. Choosing the best recording method is as important for the question you are addressing as choosing the most appropriate data elicitation method.

Research Designs

When learning about research methods it is also worth remembering that the same data elicitation method can be used in many different types of research design. Essentially, the label 'research design' is simply shorthand for the overall structure of the study to be undertaken. It specifies the components that comprise the study. It should identify the logical relationships between those components. The researcher should be able to explain how each component in the research design is necessitated by the research question that is being addressed. The chapters in this book describe how research designs are built up from a research question. The various approaches to

developing the research design that are included here illustrate that the key to a good study is a very systematic unpicking of each aspect of the research question. A thorough understanding of what it is you really want to ask or actually want to know is the vital basis for good research. Ambiguity or under-specification in the research question leads to poor research because it can result in the wrong data being elicited or data being recorded ineffectively or data analysis being misdirected. Getting the specification of the research question correct is the prime precursor of effective research.

It should already be evident that experimental and non-experimental research designs are not distinguishable on the basis of the data elicitation and recording methods they may employ. The logical distinctions between experimental, quasi-experimental and non-experimental research designs are explained in various chapters in this book. Suffice it to say here that the distinction hinges not upon the method of data elicitation or recording but upon the extent to which the researcher can and chooses to introduce structured manipulation of the participants in the study. Experimental designs involve systematic manipulation. Non-experimental designs involve no manipulation. Manipulation essentially comprises an intentional intervention on the part of the researcher that is designed to affect the participants in the study and lead to recordable outcomes. Manipulation is deemed to be intentional. It should not be confused with the unintended effects that the researcher might have upon study participants simply by attempting to elicit data. The chapters in this book illustrate a range of approaches to manipulation and their relationships to the research designs that can be used.

Figure 1.1 summarizes the various levels that coexist and can be described in piece of research. The figure can be used as an aide memoir when thinking about how to describe the methodological components of any study.

Each of the chapters in this book can be characterized in terms of the first three levels described in Figure 1.1. Table 1.1 provides that summary. Table 1.1 can be used in order for the reader to make a quick selection of a chapter that provides information relevant to particular forms of research activity. It can be used by a course leader to map out the sequence in which chapters might be included in a methods course. The table illustrates that chapters overlap in the research skills that they depict. It is consequently useful in planning comparisons between different approaches to one research tool (e.g. alternative ways of using self-report data from interviews or quasi-experimental designs).

Level 1: Research design		
Experimental	Quasi-experimental	Non-experimental

Level 2: Data elicitation		
Observation	Self-report	Archival

Each can be done through many media (e.g. written, audio, visual, artefactual). Each may involve varying degrees of interaction between the researcher and the subject of the research. Technological developments (e.g. closed circuit televisual recording, computer-assisted questionnaire administration or online web-based techniques) are dramatically modifying the nature of the interaction between researcher and researched.

Level 3: Data recording
Data recording can be structured prior to initiating data elicitation or can have structure imposed post hoc. Some structuring prior to analysis is inevitable if the research is to involve more than direct description. *The structure imposed can take many forms. It might be unitary (e.g. indicating presence or absence of the entity), or frequency-based, or intensity-based (e.g. rating or scaling approaches) or thematic (i.e. identifying patterns in the information collected).*

Level 4: Data treatment and analysis
Data may be analysed using qualitative or quantitative techniques. The same data can often be analysed using both types of technique.

Figure 1.1   Methodological levels of a research study

Table 1.1 Chapter coverage

Chapter	Research design	Data elicitation			Data recording	
		Observation	Self-report	Archival	Pre-structured	Post-structured
Chapter 2	Experimental		X		X	
Chapter 3	Experimental		X		X	X
Chapter 4	Quasi-experimental		X		X	
Chapter 5	Quasi-experimental	X	X	X	X	X
Chapter 6	Quasi-experimental		X		X	
Chapter 7	Non-experimental		X		X	
Chapter 8	Non-experimental		X		X	X
Chapter 9	Quasi-experimental	X	X	X		X
Chapter 10	Non-experimental	X	X			X
Chapter 11	Non-experimental		X			X
Chapter 12	Non-experimental		X		X	
Chapter 13	Non-experimental		X		X	X
Chapter 14	Non-experimental	X				X