DOING RESEARCH IN DESIGN

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THINKING ABOUT RESEARCH: METHODOLOGY

From this point on the focus of this book is how to 'do' research in design. In the previous chapters we explored ideas about the transformative nature of design, about what designers do, and about the practical and theoretical relationships between designing and researching. This chapter looks in detail at how to do research, focusing on what is meant by a research methodology.

What is a research methodology?

As you begin your research it will be important to think about where you want the research to take you. Just as a journey begins with a sense of purpose—you need to know where you are going before you begin—so, too, does a research project. Where do you want this research to take you? What are the core questions that you would like be able to answer? This is not to say that early decisions about your research cannot be changed. Much research is characterized by false starts, dead ends and new directions, but it is important to begin with a sense of purpose. Once you know where you want to go, the decisions about how to get there—which in research are methodological decisions—will follow naturally. To continue the analogy, it is helpful to see methodology as a map for the research journey.

It is useful to begin thinking about methodology early in your research project. Sound methodological choices are hallmarks of a successful project; so on what basis are these methodological choices made? The analogy of a map can be used to describe a methodology, but a methodology can also be thought of as the lens through which to begin to conceptualize (or map out) the research. The methodology then guides the whole project, from data gathering through analysis to the final presentation. Questions about the purposes of the research, the nature of the research and the appropriateness of the methods are all significant in a discussion of methodology. A methodology is therefore made up of a number of elements that in practice combine together in intricate ways. It is helpful to separate them into three distinct components: our research position, which influences the other components;

the particular theoretical or conceptual lens through which we view the phenomena we are studying; and our methods (Walter, 2010b). Because a research position is the basis on which all methodological choices are made, it is important to consider this first.

What is a research position?

To begin to unravel what is meant by a research position, it is necessary to return to the concepts of habitus and lifeworld. As for a designer, a *researcher*'s positioning is reflective of habitus or lifeworld, inasmuch as every individual's habitus is shaped by the particular ideas or ideologies that form the cultural or social reserves that he or she is able to draw on. For researchers, it is important to realize that, in order to understand the world better, they need to first become aware of how these ideologies already shape the way in which the world is 'seen'. In other words, they need to be able to explore the particular ideological filters through which the world is understood.

Habitus and ideology

Designers, researchers and users all interact with objects and systems within a cultural and material context that frames the way that the world is understood. Recently, the manager of a shopping centre in northern England decided to install two 'squat' toilets, to cater for the different preferences of his customers. This decision was greeted with a range of impassioned responses, described by the local press with such phrases as 'public fury' and 'public revolt', that reflected highly diverse ideologies. The Web site *Jihad Watch* (2010) posted comments suggesting that the introduction of such toilets—in pandering to the preferences of British Muslims—was a threat to the British way of life. In contrast, *Islam Today* (2010) noted that toilets for squatting on are more hygienic than toilets for sitting on, since no part of the body comes into contact with a toilet seat, and that there are health benefits in using such 'natural position' toilets. Others pointed out that such toilets are by no means particular to Islamic cultures, but are found throughout the world.

The response in England to the introduction of squat toilets reflects particular ideological positions that are specific to a particular time and place, and shaped by habitus. Elsewhere in the world, positions differ. Singapore, described by A. T. Kearney as the most globalised country in the world (2007), is a culturally diverse, multi-faith community and global air hub. Flights from every part of the globe arrive at and depart from Changi International Airport, and the restrooms at Changi provide options to squat or to sit. The ladies' toilets in Terminal 3 have been designed to evoke luxury. Pastel coloured, frosted glass walls surround you as you enter, and soft light brightens the space. The washbasins are elegant, shallow glass saucers that have been designed to appear as if they are floating above the bench top. Taps and

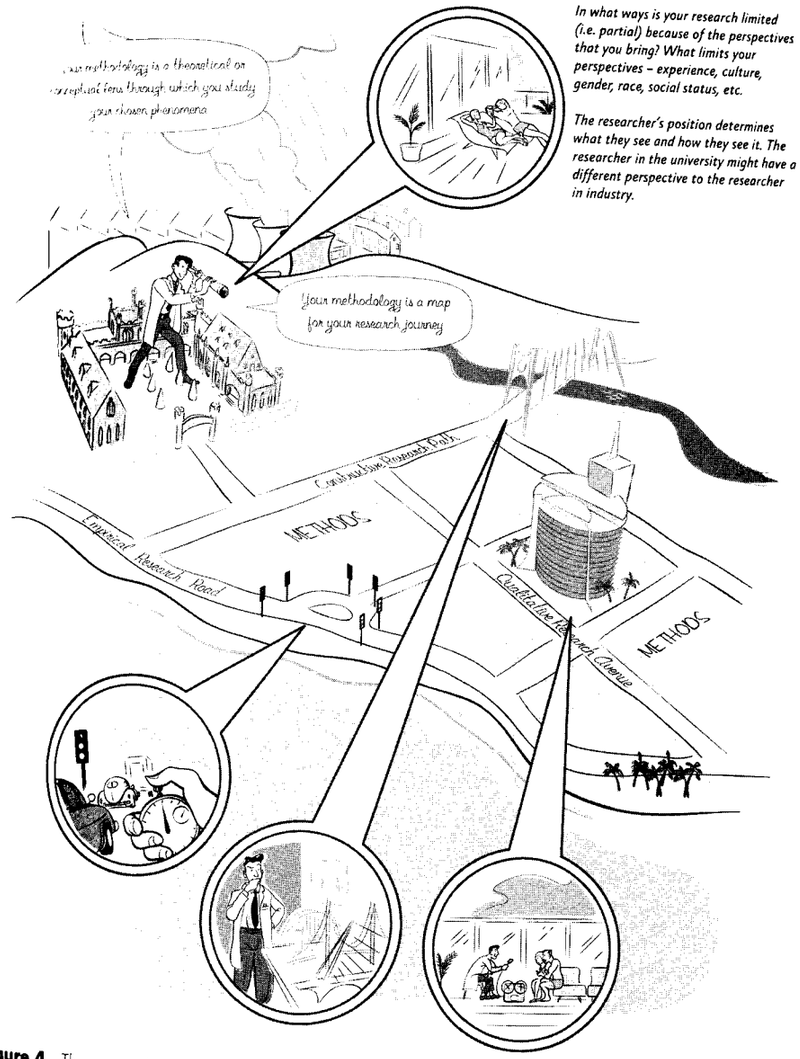

Figure 4 The researcher's position (Stuart Medley).

soap dispensers operate automatically. These are 'state of the art' facilities. Yet on some of the cubicle doors there are 'watch your step' signs, indicating that there is a squat toilet within. Inside the cubicle there is a picture to show how to use the toilet correctly. There are similar pictures inside the cubicles where the sitting toilets are found. Thus all needs are thoughtfully catered for. It is unimaginable that the

furore surrounding the introduction of squat toilets in England would be repeated in a country like Singapore.

As we write, floods are having a disastrous impact on the population of Pakistan, with the first outbreaks of cholera being reported there. In this devastated region, the consequences of a lack of sanitation are deadly, and debates about how a toilet might be styled are insignificant. A lack of sanitation is an experience common in the majority of the world. Estimates indicate that 2.6 billion people, roughly a third of the world's population, do not have access to safe sanitation (Allianz Group, 2010). In response to this crisis, the United Nations (UN) declared 2008 the International Year of Sanitation (UN, 2008); numerous campaigns and a plethora of alternative designs for toilets further attest to the scale of the problem (ROCH, 2007; WaterAid, 2010; World Toilet Organization, 2010).

Meanwhile in Australia, television advertisements for toilet cleaners that use the slogan 'What does your loo say about you?' imply that by using the advertised product young mothers can be sure not to feel embarrassed by the dirty state of their toilets when their friends visit. Here, the implication is that a woman's identity as a mother (good or bad) is linked to the cleanliness of her toilet. So we come full circle to the connections between identity (national/personal) and the toilet. This advertisement can only work in a particular cultural context, where particular cultural groups share similar habitus that is shaped by particular ideologies and practices. These advertisements are unimaginable in flood-devastated Pakistan.

The intention in using these vignettes is to illustrate that every individual's habitus is value-laden, culturally specific and contestable. From a practical point of view, different kinds of toilets are essentially different technical solutions to the same practical problem—how to dispose hygienically of human waste. Over time, and as social and cultural practices have developed, the toilet is no longer value-neutral but begins to carry with it a complex range of associated meanings and inferences, so for the president of the Restroom Association (Singapore), the etiquette of toilet use 'reflects Singaporeans' culture' and tells the world 'how civilised we are' (Reuters, 2010).

When planning research in design the researcher's position is the most important component in defining a methodology. The researcher's position is based on a combination of his or her previous experiences, cultural and social positioning (informed by ideologies) and particular worldview, lifeworld or habitus. In the toilet example, a person's objection to the introduction of 'squat' toilets might derive from his or her previous unpleasant experiences of using one. This objection might then be strengthened by the person's beliefs about the negative consequences of patterns of migration from countries in the Middle East and South Asia to England. Such an individual might perceive a threat to traditional English cultural practices (epitomized in this case by a particular design for a toilet) by the presence of large numbers of migrants and, by association, might object to the introduction of toilets to suit the needs of migrants because it symbolizes this threat. Of course, the ideological positioning of a person who was culturally familiar with a squat toilet would be very different.

In the 'sanitary ware' vignettes it is evident that individuals' understandings of the world are shaped by their life experiences, by their ideological positioning, and by their habitus. It should be clear how, if our understandings of the world develop as a consequence of reflecting on experience, we acquire new knowledge (what Kolb [1984] calls experiential learning). Engaging in a process of reflexive self-questioning leads to the revelation of the limitations and the possibilities of habitus, and is an essential first stage in the development of a research project. This process is particularly important for the designer/researcher whose central role is to present new and informed understandings to others.

Reality, knowledge and values

Our research position, knowingly or unknowingly, underpins all our research: 'the questions we see, the answers we seek, the way we go about seeking those answers and the interpretation we make' (Walter, 2010b, p. 13). Even the capacity to comprehend what questions should be asked can be limited, since 'no-one can actually establish for sure what social reality is, [and] how it connects to knowledge and experience' (Ramazanoglu & Holland, 2002, p. 57). In making clear a research position, the researcher needs to pay careful attention not only to how a research position is influenced by habitus but also to what reality is thought to be, what is thought about how the world is known, and the ideologies and values that shape the ways in which the world is seen. These ideas form the second component of a research position.

According to Lather (1991), all social research is partial, perspectival, limited and constructed as a specific social production. Because events, objects or people are understood from a particular, limited perspective, an understanding of them is thereby always partial. This means that our understanding is always incomplete, since we cannot understand something from a perspective that we do not have or are unable to adopt. Besides meaning incomplete or in part, the word partial has other meanings. It can be used to indicate that someone has a particular liking or fondness for, or bias towards, something. This can be described as one's partiality. Time, place and culture all affect what we can know and how we know it, and in this sense all knowledge is contextual. So the perspectival, partial and contextual nature of what we know is a key problem that must be considered when designing research.

Two philosophical terms used to refer to ideas about reality and knowing are ontology, which refers to ideas about *what* can be known (or what reality is), and epistemology, which refers to ideas about *how* that reality can be known. The two terms are intimately connected, since questions about what can and cannot be known (which are ontological questions) cannot be separated from questions about how the world is known (which are epistemological questions). Factors such as our gender, our cultural background and our professional identities—which in part make up our research position—may either limit the ways it is possible for us to know the world, or provide possibilities by positioning us to know the world differently from

others. For example, a researcher who also happens to be a designer 'knows' what a fellow designer experiences in a way that a nondesigner cannot. Similarly, a designer whose practise is based in a developing country 'knows' what that is like in ways that are different from the ways a designer who practises in a global centre such as New York can 'know' what it is like. The one way of knowing is not necessarily better or worse than the other, and whether it is or is not will depend on the research context. The important thing is that these two ways of knowing will be different. Even though all research is 'embedded in commitments to particular versions of the world (an ontology) and ways of knowing that world (an epistemology)', the ontology and epistemology on which a particular piece of research is based are 'often taken for granted and not regarded as worthy of consideration' (Usher, Bryant & Johnston, 1997, pp. 173–176). We hope to have shown why these are worthy of consideration.

Another set of questions to consider when exploring a research position are those about what the researcher values. Such questions will further shape a research position and have particular relevance to decisions about the purposes of research. Values are a result of our habitus and field relations, and reflect both personal and professional contexts. They inform the way we answer questions about why we have chosen a particular research focus and why we think it is worthwhile. As well, our value position underlines our concerns for the emotional safety or professional integrity of the research participants, and our views about the exercise of power and oppression in human relationships (including those between researcher and researched). For example, there may be aspects of human experience that we feel it would be unethical to investigate. When this is the case, we will never be able to 'know' these aspects of another person's experiences. In other words our methodological decisions, which are decisions about how our research is designed and conducted, are necessarily informed by ontology, epistemology and by what we value, which are in turn formed in habitus and framed by the field.

For these reasons, it is important when you begin thinking about research to be aware of your position in relation to the ways your perspective is shaped by habitus and field relations, the particular ontological, epistemological and value questions that relate to your research. The questions for reflection found at the end of this chapter will help you identify where you are positioned with respect to these questions. When taken together, these interconnected elements all work in association to shape your research position.

To summarize, methodology's focus is on how we can and should study the world, and on what questions we can and should ask about it. One way of understanding methodology is to see it as the 'worldview lens through which the research question and the core concepts are viewed and translated into the research approach we take' (Walter, 2010b, p. 13). This worldview lens could also be thought of as a research position. From this point of view, methodological decisions are filtered and shaped by a research position, which in turn is shaped by the life experiences and the social, cultural, political and economic circumstances that make up habitus. Our position is not fixed, however, because our habitus can change. A reflexive researcher is aware of this, and understands how his or her position shapes the nature of the research.

Theoretical lenses for research

A second component of methodology is the particular theoretical or conceptual lens through which the phenomena we are studying are viewed. Since the theoretical lens is a significant influence on methodological decisions, it is important to be explicit about the theoretical position we take. The particular theoretical position adopted in this book is based on the view that the world is not knowable objectively; that it is not possible to be a disinterested observer; and that knowledge is never impersonal, rational and value-neutral (Neuman, 2000). Since our view is that knowledge cannot be abstracted from the specific time and place in which it was made, we argue for reflexivity in research; in other words, researchers must be able to identify how their subjective cultural position influences the ways they understand new information.

This book also represents a particular view of the design process: that it involves engagement with the social realm. This view is in turn based on the theoretical position that underpins the way we view research in design in this book: that since social processes cannot be directly discovered, the role of research is to try to understand those processes through interpreting what we observe or experience. This positions us to use an interpretive lens. Similarly, since we understand that the world is characterized by inequalities, we see the role of research being to explore and attempt to expose examples of inequality. This positions us to use a critical lens. While other theoretical lenses from social science research, such as a functionalist, feminist or a postmodernist perspective (see Walter, 2010), might also provide lenses for research in design, in this book we use two associated research lenses (or theoretical positions): the interpretive lens and the critical lens (see Table 1). These lenses also inform the four specific methodologies examined in Chapters 6 through 9, and are now explored in more detail.

The interpretive lens

An interpretive (or hermeneutic) lens is particularly influential in social and educational research, since it 'focuses on human action and assumes that all human action is meaningful and hence to be interpreted and understood' (Usher, Bryant & Johnston, 1997, p. 181). Interpretive research is concerned with understanding the social world: understanding 'everyday lived experience' (Neuman, 2000, p. 70) and 'the way [people] construct their lives and the meanings they attach to them' (Sarantakos, 1993, p. 37). Moreover, the interpretive tradition of research holds that people are part of and create 'their own reality', and hence the world cannot be understood without us also understanding the people who create that reality (McNiff & Whitehead, 2006, p. 10).

Table 1 Theoretical Lenses Used in *Doing Research in Design*

Research lens	Epistemology/Ontology	Researcher's role	Research purposes
Interpretive	• It is only possible to represent aspects of social reality • Researcher is subjective observer • The world is open to interpretation	• Engage with other people's lives • Enable the 'voices' of others (i.e. designers and design users) to be heard	• To explore habitus of designers and users, in interaction with the field • To interpret design practices, objects and systems • To understand how the designer or the user engages with design practices, objects and systems
Critical	• The world is characterized by inequalities because the lifeworld is systemically colonized • Ideology is all-pervasive. Knowledge implies action	• Critically observe design practices • Engage with other people's lives, • Initiate or facilitate change	• To disrupt, emancipate, transform the habitus and field of design • To explore how the user is affected by design practices, objects and systems • To change design practices, objects and systems

Sources: Lather, 1991; Pearce, 2008a.

Hermeneutic research is associated with the interpretive tradition, and involves interpreting meaning that is 'embedded within text' (Neuman, 2000, p. 70). We assume that such text can comprise conversations, objects or practices as well as written words. There are several implications of using this research lens. One important implication is the recognition that, since the way we know the world is through interpreting it, both the researcher and the research participants are *jointly* engaged in acts of interpretation, and the research process becomes a conversation between the researcher and the participants (Usher, Bryant & Johnston, 1997). This means that in interviews, for example, part of the researcher's role will be to seek out and negotiate meaning with the interviewee. (This is discussed further in Chapter 7.) A second implication is that interpretation is always partial, in that it is always relative to one's existing interpretive framework, and hence what Gadamer calls our 'pre-understandings' provide the conditions (including the limitations) under which we experience the world (Gadamer, 1975, quoted in Usher, Bryant & Johnston, 1997, p. 182). Further, the hermeneutic circle of interpretation, where interpreting

part of something depends on interpreting the whole but interpreting the whole depends on interpreting the parts, means that 'knowledge formation always arises from what is already known', and is therefore not linear but 'circular, iterative, spiral' (Usher, Bryant & Johnston, 1997, p. 182). Hermeneutic interpretation always takes place within the specific context of related assumptions, beliefs and practices 'of which both the subjects and objects of the research are never fully aware' (Usher, Bryant & Johnston, 1997, p. 182). However, as mentioned in Chapter 3, praxis can help the researcher make more explicit the conditions that make up the particular context from which her or she approaches the task of interpretation.

To use an interpretive lens for research suggests that researchers 'read' the world to 'discover' the meanings embedded there (Neuman, 2000). Although the quest for disinterestedness in a researcher may be misguided, since our pre-understandings of the world shape our interpretations, it is possible for researchers, through the research process, to challenge and destabilize their pre-understandings. This is because it is 'precisely through the interplay between one's interpretive framework . . . and that which one seeks to understand that knowledge is developed' (Usher, Bryant & Johnston, 1997, p. 184). Thus by *acknowledging* our pre-understandings we can put them to work to become more open-minded researchers. So, in relation to research processes, when using an interpretive lens, every decision is filtered through that lens. This includes the choice of research participants, decisions about how to communicate with them, the questions asked and ways of conducting the analysis.

To reflect this, in the final research text the researcher will be as present in the text as he or she has been throughout the research process. This is one reason why autobiographical elements so often form part of interpretive research, and why research texts that are produced by researchers using an interpretive lens will use the first person pronoun in their writing, rather than representing themselves in the third person (as in 'the researcher conducted interviews with 20 participants'). The interpretive framework points to a reflexive, self-conscious researcher, and underlines the need for researchers to disclose the pre-understandings that have shaped their research. The processes of choosing research participants, identifying a research focus, choosing approaches to data collection and selecting what actions or views to report are decisive acts made from a particular research position. A researcher working within an interpretive lens acknowledges this by providing opportunities for the experiences of others to be given centre stage, and making the research a vehicle through which these voices can be heard. In research in design, the voices will be those of designers themselves, or of users of design, or of both, and the research purpose will be to explore, interpret and understand the experiences of designers and users of design as they interact with design practices, designed objects or designed systems.

The critical lens

The critical research lens draws from the interpretive lens in its views of the researcher and of the limitations of perspective. Research methodologies can readily

combine elements of both (for example in participatory action research). From the perspectives of both the interpretive and the critical research lenses, knowledge is seen to be interested (in the sense of having a vested interest in something) and not neutral. Critical research moves away from interpretive research in that it actively works to unmask the power relations hidden within social interactions, and seeks to go beyond the portrayal that results from research in an interpretive lens. Since the researcher's lifeworld is also systemically colonized, and subject to the same power relations as the research participants, to adopt a critical position is not just to acknowledge researcher subjectivity but also to build it into the research process.

The researcher does this by becoming reflexively aware of his or her subject position. Using a critical lens for research therefore places the researcher more centrally in the research process. Researchers who work within a critical position acknowledge that epistemology is culture-, value- and history-specific, and expect to be open about their political and theoretical positioning in relation to the concepts with which the research is concerned. They will be explicit about the way their ideological stance influences the texts that are produced, since to use a critical lens is to acknowledge that the researcher can never be hidden (Neuman, 2000). Critical researchers, then, will be explicit about their original position and document 'where their research took them as investigators and political actors' (Fine, in Apple, 1996, p. ix).

Since it includes the critique of existing ideological or institutional operations, a critical position towards research enables the process to extend beyond knowledge generation. Critical researchers look to possibilities for changing the world, and work to 'disrupt and transform existing ideological and/or institutional arrangements' (Fine, 1994, in Apple, 1996, p. ix). Critical research typically explores how individuals relate to the larger social and institutional contexts in which they work by questioning 'the assumptions which a discipline or field takes to be self-evident' (Stronach & MacLure, 1997, p. 3).

While critical research differs from interpretive research in the kinds of questions asked and the purpose of the research, researchers from both methodological positions will typically use the same techniques (Neuman, 2000). In a sense, all research that aims to 'uncover and demystify ordinary events' (Neuman, 2000, p. 76) lies within the critical framework. When using a critical lens, both the researcher's ideology and his or her position in relation to habitus and field become a central and explicit element in the design and conduct of the research. In research in design, the purposes of critical research may include disrupting, emancipating or transforming the habitus and field of design while exploring how design practices may affect users. The ultimate goal of critical research will be to generate knowledge that may lead to change in design practices.

Methodologies for research in design

Later chapters will specifically explore four distinct methodologies: ethnography, narrative, case study and action research. These methodologies have been chosen partly because they are well established in social research, and have been used widely and successfully in professional contexts such as teaching, nursing and business. For these reasons, they are very suitable for research in design. However, these methodologies also fit well within the book's theoretical lenses. For example, ethnographic and narrative forms of research, where the focus is on the lived experiences of individuals or groups of people, 'fit' well within an interpretive research lens.

Participatory action research, where the research purpose is to bring about change, develops from a critical lens. A critical dimension can be introduced to all forms of research, if the research purpose includes the intention to expose injustices or challenge what is taken for granted. Hence, ethnographic or case study research can be 'critical' (Madison, 2005) if the intention is to uncover inequalities or experiences of marginalization in a group of people or in a particular case. When in later chapters we explore in detail how to conduct ethnographic, narrative, case study and action research, the relevance of each approach to both interpretive and critical research lenses will become clearer.

Conclusion: from methodology to methods

By now you should be beginning to be able to identify the particular methodological lens you might use in your research, and recognize that when designing a research project (that requires the selection of a particular method from a vast range of possibilities) your personal history, perspective, values and convictions and theoretical orientation are all significant. Such methodological considerations are central to the research process—the approaches to knowledge generation that you take will both limit and make possible what you are able to know as a result of your research.

The final components of methodology are the methods chosen as the means to conduct the research. The terms methodology and methods are often confused. Methodology can be understood as the study or theoretical framing of methods, or of the broader principles that underpin particular methods. Methods are the particular strategies used when conducting research. Examples of methods are interviews, observations, surveys and document analysis. Choice of the methods for collecting data will grow out of methodological considerations such as those discussed, and it is essential for researchers to consider how their research position is reflected in their choice of methods. Our four named methodologies—ethnography, narrative research, case study and action research—are all examples that combine a congruent set of principles to inform the whole process of the research, and have become well established because of their coherence and usefulness. Each methodology also typically makes use of a group of complementary methods that suit both the research purpose and the theoretical orientation of the methodology.

Since research practices both reflect and are developed from a research position, it is important to use methods that are congruent with that research position. Often, researchers adopt a methodology without first considering their research

position; for example when research decisions are made on the basis of efficiency. Sometimes, research practices are adopted without recognizing that every practice is underpinned by a particular research position and by a theoretical lens, with the result that the research processes might be incompatible with the underlying research position. You are encouraged to think of methodology as a tool for making intellectually sound and clearly reasoned choices about the conduct of your research, and for explaining the basis of those choices to others.

There will be many occasions when you will need to explain your methodological framework to people such as your research supervisors or colleagues, your research participants, your readers or your examiners. We encourage you to engage with ways in which others have described and explained their research decisions to help you explore yours. If a particular designer or researcher has clarified and developed sophisticated and nuanced ideas about research processes that work, then make use of them (but do not feel you have to follow them slavishly). As researchers, we all need to 'come clean' about our research positioning by explaining the ways in which we are partial, and by identifying the perspectives from which we understand and approach the design/research problem. When choosing a methodology, it will be important to explore the logic of the connection between what you want to know and how you go about knowing it. The most important thing is to ensure that your methodological choices are clear, purposeful, coherent and ethical, and capable of enabling you to engage in the kind of inquiry you intend.

Finally, it is important to recognize that what is capable of being produced as a result of the research process is at the same time circumscribed by the processes and methods used. The methodological decisions you make will lead you to produce certain kinds of knowledge, and by the same token that knowledge will be either limited or made possible by the decisions you make. This needs to be taken into account when choosing a methodology. Even if your research does not make use of a particular named methodology (and the potential of 'mixed' methodologies is becoming well recognized) you need to be explicit about how your research practices will lead to the generation of new knowledge—which is after all what every research project aims to do.

A sound understanding of methodological considerations is essential if you are to be able to go on to choose the most useful tools for your research purpose, which is the focus of the chapters in the remainder of this book. As your research expertise grows your methodological position will develop, and you will find you are able to make sound choices from the wide range of possibilities available, with a view to making the best choice for the research problem you are grappling with. The questions for reflection provided at the end of this chapter will support your thinking about methodology.

In the following chapter we illustrate how you might go about developing your research question, and show how the framing of the research question then enables you to make methodological decisions. Then in Chapters 6 through 9 we explore further some of the possibilities and limitations of different methodological choices,

and examine the usefulness of different methods or tools for inquiry for different kinds of research questions. It is through processes of developing our understandings of what it is possible to find out, of how knowledge is generated, and of how it is disseminated that our research praxis evolves. It is by actually engaging in the process of conducting research that we acquire the knowledge, skills and understanding necessary to engage in research.

Questions for reflection

1. What do you think your research problem is going to be?
2. What particular perspectives do you bring to this research problem?
3. What are the advantages of these perspectives, in relation to the planning and conduct of your research?
4. In what ways is your research limited (i.e. partial) because of the perspectives that you bring? What limits your perspectives? Consider experience, culture, gender, race, social status, age, geography.
5. What is the purpose of your research, and why is it important?
6. What changes might occur because of your actions?
7. Who is the audience for the research? Who might benefit from your research and how?
8. What theoretical lens would be appropriate for your research?
9. How would you describe your position as a researcher? Write a few paragraphs in which you describe and explain your research position.