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DOING RESEARCH IN DESIGN

**Christopher Crouch and
Jane Pearce**



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PRACTICE AND PRAXIS, REFLECTION AND REFLEXIVITY

This chapter introduces two sets of paired concepts—practice and praxis, and reflection and reflexivity—that help explain the way in which we think about practice in design and research. These concepts are important because they help link physical and social concepts of the world, giving us a unified sense of the way in which our actions impact ourselves and our surroundings. We further illuminate the way in which design and research are related to each other by discussing the nature of researching itself.

The first two chapters of the book developed the proposition that designing and researching are processes of initiating change in the manmade world. This ability to initiate change is what sociologists call 'agency', a term which describes the capacity of individuals to act in the world and which is a reflection of the empowered individual's ability to make decisions based on rational choices (Barnes, 2000). We have spoken of the way in which designers' and researchers' agency within the fields of design and research can lead to action, whether that action is the act of designing or researching or the co-relationship of the two. The ability to conceive of action, because of one's agency, enables change. It is important as a designer and a researcher to understand the way in which the change envisaged by action is understood practically and ethically. Practice and praxis are terms used to explain the way in which action takes place, and reflection and reflexivity are ways to begin to understand how we manage agency and actions.

Reflecting on the relationship between design and research, it is evident that there is an intimate relationship being thinking and acting at many different levels. The Japanese designer Kenya Hara is one of the contemporary designers who has built on Jones's idea of design as an initiator of change and who is now engaged in debate about the purpose and consequences of design. In his book *Designing Design* (2007), Hara proposes that to discuss the nature of design is not only an essential part of understanding what design is, but is itself a form of designing. Opening up the design process to scrutiny from all directions, and defining design

as a way of thinking as well as making, develops an understanding of design as research.

Practice

The researcher into design is active in at least two communities of practice, that of research and design. Researchers both look out from their community of practice and look into another. Researchers have to manage the task of being mindful of both their own subjective position and their aspiration for objectivity. Sometimes practices overlap seamlessly; sometimes they appear incompatible. If researchers are reflexive they will realize how they have been moulded by their own research community, how they operate within its paradigms, how they contribute to its maintenance and how this has the potential to frame the way in which they view other communities. This is a central insight into the way we make sense of the world and is of fundamental importance to researchers as they move backwards and forwards between different value systems and processes. It is in this way that new information is reordered and shared as applicable knowledge. In order to research well, and in order to research both the design community's practices and understand how the processes and aims of the research community frame the researcher, the researcher needs to examine what is meant by practice and how it operates.

We wish to introduce a working definition of practice (and practices) that draws from sociology. It has links to the colloquial use of the term(s), but differs in the way in which it is used. If we reflect on the conversational way in which practice is used, it is often used to describe an activity which is normalized and has been validated by an established authority such as a professional association. We wish to suggest that practice is not necessarily indicative of how things ought to be, and is not a 'commonsense' activity. It is in fact a body of knowledge that is in constant flux, responding to new material conditions and ways of thinking. Both research practice and design practice grow out of the relationship between agency, action and the social structure in which they are contested and validated. The tensions and contradictions within a practice are managed by the community that defines it. That process of management within the field privileges certain aspects of practice at the expense of others. This means that often the first task of researchers is to contextualize their research question and give it some sort of background in order for the framework and circumstances of their research question to be understood.

Practice is not just made up of 'doing', it is also related to ideas and theories. Ideas exist both as personal and as socially shared thoughts. They are the product of mental activity and can be the thought, or mental representation of something, or an abstract concept such as a belief or conviction. They are the result of testing or interacting objectively with the material world, or are produced through social interactions and adopted as part of a shared ideology. For example, one might be part of a design team that has been given a brief to simplify the feeding regime of intensively reared

chickens. One might have ideas about how much food and exercise a chicken needs in order to develop, which are largely objective ideas. There are also ideas about chickens that are less easily tested but which may nevertheless be held to be true. Such subjective ideas might include thinking it acceptable to intensively farm chickens in industrial conditions, where they have no connection to the natural world at all. Designers are endlessly confronted with design problems that emerge from ideas situated on this continuum from the objective to the subjective. As mentioned in Chapter 1, ideological positions are created in the relationship between subjective viewpoints and social consensus, and designers and researchers have to navigate ideological issues as much as practical ones when designing.

Theory

A theory is a set of ideas developed to explain facts. Sometimes a theory is based on objective data and sometimes it is speculative. To theorize is to speculate and construct explanations about the world and our relationships with it. Theories exist about ideas and objects, and can be tested against the material conditions of the world. Once put to the test they may be found to be useful or useless, but their intention is always to explain. Sometimes theories are not immediately testable. This may be because they are ideological, such as theological theories about the nature of gods, or more data may be needed before the theory can be proved, as is the case in contemporary theorizing about black holes. The designer and the researcher exist in a world of theories about design and research as well as in relation to the other theories that make up our ideological environment. Sometimes ideologies are visible to us. They are usually expressed in the values and actions of other societies and cultures, and because they are different to ours we can readily identify them. We are less likely to identify ideological positions within our own society and culture because they have become 'normalized'. Food is a good example here. The rights and wrongs of eating pigs is contested the world over on religious/ideological grounds. Less fraught is the debate over whether horsemeat is edible or not. When aspects of others' ideology is evident they are often contested, but those ideologies that are 'ours' and are absorbed into our everyday lives (as part of practice) are less noticeable and thus less likely to be contested. The familiar theories that inform our everyday lives (theories of the value of consumption for example) are often difficult to identify because they seem to be normal and uncontestable. Their everyday quality makes them 'transparent', to use Stuart Hall's term (1977). Hall argues that sometimes, everyday practices (what he refers to as 'commonsense' discourses) appear to be ordinary, and it is because they are so unremarkable to us that we are unable to articulate how they work and what their effects are. The way in which practices operate on us becomes invisible to us; it is part of the job of the researcher to reveal the ideas, theories and ideologies that form the context for the agency of the designer.

The need for research into design practices has increased as the nature of design has changed in response to the new conditions in the communities of practice

that surround it. The industrial consultant and writer on design Don Norman has pointed out (2010) that as the conditions that formed designers in industrial societies (and their work, which was primarily focused upon physical products) has altered beyond recognition so, too, has their work. Yet we still think of the designer as someone who makes, rather than as someone who thinks. This is why our working definition of designing as an act which impacts on the man-made world is useful. It is flexible enough to encompass the new ways in which man-made systems impact our world.

Contemporary designers work on organizational structures and systems many of which, as Norman points out, involve complex social and political issues. Decisions about designing are not simply based on questions of doing and acting but also of thinking about action and its consequences; we will be developing this idea as the chapter progresses. The same pressures exerted on the design community are also exerted on the research community. Researchers must understand how complex their own community practice is before any kind of meaningful research into other communities can take place. The act of researching is not simply the application of information-gathering methods but also involves a consideration of the ways in which those methods are appropriate or inappropriate to the circumstances and for the purpose of researching. It is through this dialectical process that the researcher determines what kind of research methodology (by this we mean the thinking that surrounds how a research enquiry is undertaken) is suitable for the research task.

As we have indicated, communities of practice can be observed from the outside. But we also exist within them, sometimes fully aware of the way in which they affect our thinking and sometimes not. As researchers, we need to be reflexively aware of how practices act upon us and how we act upon them. Building on our introduction of Pierre Bourdieu's ideas of habitus and field, we wish to develop his idea that the individual's habitus governs personal practices. This does not occur through a strict mechanical relationship of cause and effect between habitus and field, but rather through a more complex and subtle process in which the individual's habitus has 'an endless capacity to engender products—thoughts, perceptions, expressions, actions—whose limits are set by the historically and socially situated conditions of its own production' (1977, p. 95). This view of the origin of practice gives researchers into design practice an understanding of how they might approach a subject for research, by asking which of the researcher's presuppositions need to be identified as factors that might influence the research process or the interpretation of research findings. An understanding of how the design community of practice functions in the field also helps researchers grasp the ways in which individual designs (and ideas about designing) are related to wider sets of values.

Creativity

This approach leads to a very particular way of understanding creativity, or productive thinking, in design because creativity is seen as 'an acquired system of

generative schemes' where 'all the thoughts, all the perceptions, and all the actions' (Bourdieu, 1977, p. 95) of the creative individual are consistent within the conditions of the field. Thinking of creative practice in design as a dynamic relationship between the habitus and field empowers the researcher because it locates design thinking in the context of a dialectical engagement between ideas and the material world, positioning design in a continuously changing social environment. If we further develop the ideas about abductive thinking raised in the previous chapter, then it can be suggested that the framing of invention and creation through the concept of abductive thinking makes creativity a form of productive thinking that can be materially examined even if it is not perfectly understood.

The researcher should not see practice as deterministic: the result of simple cause and effect. Nor should the researcher see practice as monolithic and fixed, because practice does change, sometimes led by ideas about practice and sometimes because of the introduction of new technologies that affect the ways in which things are done. It follows then that the relationship among habitus, field and practice is a dynamic one and that there is a connection between the capacity to act and the social structure that surrounds actions. Bourdieu acknowledges the possibility of reflecting on one's habitus and urges the adoption of a reflexive position (1990a) where the individual is able to understand the relationship between his or her own and others' ideological assumptions in the act of communication and meaning making. How else can practices change? This has great significance for the researcher who must realize that research is an objective quest for knowledge that is always informed by the subjective position of the researcher.

The role of subjectivity in researching and creating practice is important, because if traces of practices can be identified with the field then it follows that there must also be a residue of those practices within the individual who engages with the field. Researchers can attempt to reflexively engage with the conditions that inform their sense of self and frame their way of thinking, but how can researchers make sense of the subjective positions of others? The problem with researching subjective knowledge is trying to find ways of identifying it and making it 'measurable'. It is possible to measure the outcome of design thinking through the objects that are produced by designers; it is also possible (through the concept of abductive reasoning) to identify the jump from creative thinking into action and examine the intellectual and emotional circumstances that facilitated that jump. Both these approaches privilege action that emerges from the subjective realm in the form of systems and objects, but is there a way of conceptualizing the reservoir of knowledge that the designer draws from?

Tacit knowledge

The concept of 'tacit knowledge' can help to explain this concept and provide the researcher with ways of understanding how tacit knowledge might be conceived as the engine that drives abductive reasoning. Tacit knowledge exists both within the

individual and within a community of practice, so the researcher needs to find ways of navigating its terrain. The term 'tacit knowledge' comes initially from the philosopher Michael Polanyi who described it as the phenomenon that 'we can know more than we can tell' (Polanyi, 2009, p. 4). Polanyi's ideas have been developed philosophically and practically by others since he first raised them in the 1960s, and the question of how tacit knowledge can be made explicit runs through many disciplines. Exactly what constitutes tacit knowledge is still being argued, and as Harry Collins puts it, 'questions about the nature of tacit knowledge are tied up with questions about the transfer of tacit knowledge, and questions about the transfer of tacit knowledge are tied up with questions about converting the one type of knowledge into the other' (2010, p. 8).

As a working definition for our purposes in this chapter, tacit knowledge consists of sets of information and practices that we call upon unconsciously but cannot fully articulate. For the researcher, this body of knowledge might need to be made explicit in order to develop and extend an understanding of a practice. For example, the traditional Chinese practice of decorative paper cutting is under threat as contemporary rural communities disperse and individuals go off to find work in the ever-growing industrial cities. A researcher might wish to discover how paper-cutting practices can be preserved. There is the clear question of how the social and cultural context that sustains the practice can be maintained, but this is explicit. The tacit knowledge within the community itself is more difficult to extract. How are the paper cuts made? How is this tacit, embodied knowledge transferred in the community? Might it be codified in a handbook, to be taught to others? Could a machine be programmed to do it or would this destroy the integrity of the objects? How are choices about the subject matter of paper cutting made in the different regions of production, and could a computer be programmed to make such choices? These are all questions that could elicit information about the knowledge that craftspeople have within their community but which at the moment is theirs alone, unarticulated and unrecorded. Does the articulation of that knowledge mean the objects can then be duplicated identically outside the community? These are obviously rhetorical questions but by raising them we hope to demonstrate that in researching design practices there must be a realization that it is impossible to reduce practice down to a set of immediately understandable and reproducible skills.

Practice is a combination of tacit and explicit knowledge, and it is the researcher's job to try and unravel the two. Tacit knowledge is embedded knowledge whose principles and practice may be difficult to identify and separate, and so almost impossible to reproduce, but we think it is simplistic to imply that tacit knowledge cannot be articulated but simply demonstrated and imitated. Tacit knowledge is intellectual knowledge as well as physical knowledge; its practices are the result of using both intellectual and material tools.

Practice is a whole conglomeration of shared habitual activities, some of which are easily communicable and others of which are less so. Practice creates and reproduces the field it exists in, but it also has the capacity for change because if it is

based on the agency of the individual, then practice has the capacity to transform as well as reproduce the status quo. Practice, when thought of this way, as a constructed phenomenon, becomes an approachable subject for the researcher who can identify its parts and processes and subject them to scrutiny. When research takes place into design practice, designing and researching practices are engaged in a dialogue between how things are done and how they might be done. We can develop this thread to propose that if practice can change, then it is because practice is being *thought* about. Practice is not just doing but also thinking about actions.

The relationship between theory and practice

In his *Outline of a Theory of Practice* Bourdieu talks about the dialectic between perceiving, understanding and acting that takes place in practice. He says that 'practice always implies a cognitive function, a practical operation of construction (which sets to work, by reference to practical functions, systems of classification (taxonomies) which organise perception and structure practice' (1977, p. 97). In this modelling of practice, thinking and acting are partners, informing each other.

We have already mentioned the commonly held idea that practice and theory are in opposition to each other. It doesn't make much sense the more one examines it, but it might be worth briefly discussing why this view is sometimes held. Colloquially, theorizing has come to represent a detachment from the material world that may be expressed by the apocryphal 'how many angels can dance on the head of a pin?' which is often used as an example of theorizing at its most abstruse. It is obvious that there is a continuum that stretches between thinking and doing; to think about sweeping the yard is different from doing it, and thinking about designing a broom is quite different from using one. We think the important point is that both ends of the continuum are linked to one another and that both ends of the continuum are enriched through their dialogue with each other. While thinking about designing a broom is not always a substitute for the lack of one, theorizing what a broom is for, how it might best be designed and how it might be produced is a productive exercise in resolving its absence. Theorizing is hypothesizing the world as a way of understanding our interactions with it. Ultimately, theories have to be tested, and if they are useless then they are discarded. If theories are useful as tools, then they become incorporated into the structure of our lives and will in turn be tested and revised. To theorize is not something that is done separately from doing; theorizing about something is thinking about how things are done. With this in mind, it becomes evident that practice is not in opposition to theory, but that the two are entwined. Part of the researcher's job is to understand that relationship.

Praxis

Another way of thinking about the agency of individuals and their practice is to examine the idea of praxis. The researcher will come across this word and its related

concepts frequently in readings about practice. Practice can be thought of in two ways. In the lazy way, in which it is simply tasks and skills that are learnt and administered, and the way in which we have addressed it, as skills that are reinterpreted and reapplied even as they are learned. Praxis relates to the latter conception of practice, where action and thinking work dialectically. The term praxis holds its core meaning more coherently than practice does, despite being used in a number of different forms and contexts. It retains that consistency of meaning because unlike 'practice' it has no colloquial usage and it has philosophical origins that go back to classical Greece.

We wish to examine praxis from four different aspects. We hope that by doing this we can demonstrate both how praxis is descriptive of a way of thinking about the world and how it can be used as a critical tool for researchers. The four ways in which we frame praxis are:

- as a way of conceptualizing practice;
- as a philosophical tradition that informs cultural analysis;
- as a tool for research;
- as a way of framing the consequences of designing objects and systems.

Conceptualizing praxis

The concept of praxis has a long history and has been open to interpretation and contestation throughout its two thousand year evolution. Its origins lie with Aristotle who divided human activity into three parts, *theoria*, *poiesis* and *praxis*. *Theoria* can be thought of as theorizing or contemplation, especially the theorizing of what 'truth' might be (the typical preserve of philosophers, but we will be teasing this idea out in more detail in the next section). *Poiesis* is the activity that produces things, using technical and planning skills. *Praxis* refers to the *way* in which we do things. So in an Aristotelean sense, praxis sits in a relationship between thinking and doing. Thought of like this, in its simplest form, praxis can be considered to be a way of thinking about action and a way of acting on thought. David McClennan refers to it as 'a philosophy of practical activity' (McClennan, 1969, p. 10).

For the Greeks, praxis was the privilege of those who were free, for they alone had the agency to act as individuals. There is a sense of social obligation to those engaged in praxis; skills can be used for either good or bad, but in the dynamic relationship between theory, making and praxis, the ethical role of praxis was important. The outcome of successful praxis is *eupraxia*, where action has been performed 'well'. *Eupraxia* has both a social dimension and a personal one. It acknowledges that we have not only become free 'to engage in the activity that is most truly the realization of ourselves' (Lawrence, 2006, p. 60) but also that the individual has an ethical responsibility to others. More recent philosophers, developing the idea that praxis is the privilege of the free, have further suggested that one can become free by exercising praxis.

Praxis
Thinking and doing
and their consequences

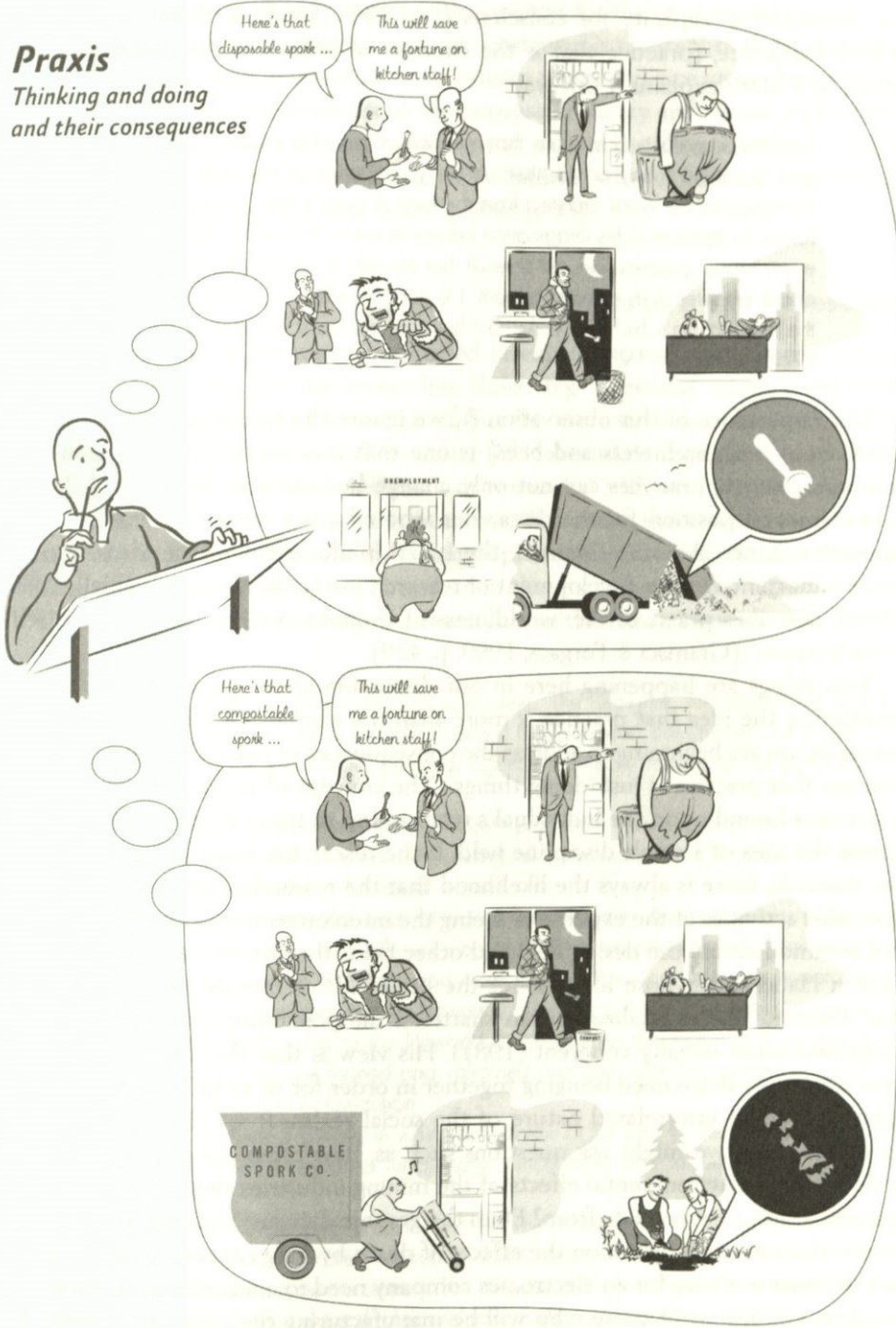


Figure 3 Praxis (Stuart Medley).

The German philosopher Karl Marx suggested that praxis was the way by which we developed a 'capacity for conscious creativity' (Kitching, 1988, p. 26). Un-reflexive practice, (practice that is the exercise of skills without thought) is not praxis, and Marx explains it this way:

A spider constructs operations that resemble those of a weaver, and a bee puts to shame many an architect in the construction of her cells. But what distinguishes the worst architect from the best of bees is this, that the architect raises his structure in his imagination before he erects it in reality. At the end of every labour process, we get a result that already existed in the imagination of the labourer at its commencement. He not only effects a change of form in the material on which he works, but he also realises a purpose of his own. (Marx, 2007, p. 198)

The importance of this observation (if we ignore the worrying gender assumptions about both architects and bees) is one that may seem self-evident in contemporary terms; practices can not only change but can also be changed. This is a fundamental position for the researcher who adopts a critical as well as an interpretive stance. Antonio Gramsci, the Italian philosopher whose ideas were of great importance in the development of research into cultural studies (Hall, 1980, 1990), describes praxis as the 'worldliness of thought' and a philosophy of 'self-consciousness' (Gramsci & Forgacs, 1999, p. 429).

Two things are happening here in our discussion about praxis. Firstly, we are reinforcing the idea that practice is more than the exercise of technical skills, and secondly, we are beginning to address the consequences of practice beyond the conception that practice is just 'doing things'. The concept of praxis can explain how practice is bound up in the individual's relationship to issues that intersect and cut across the idea of a single discipline field. If the researcher maps out a design field for research, there is always the likelihood that the researcher gets too focused on specialist activities at the expense of seeing the interconnection between issues that are common across the design field and other fields that encompass social activity. Jurgen Habermas, whose ideas about the lifeworld we introduced in Chapter 1, has observed that specialization has shattered the possibility of making everyday communication socially coherent (1981). His view is that the disparate forms of specialist knowledge need bringing together in order for us to fully understand the complexity and interrelated nature of the social realm. If we directly relate this to design, then we might ask questions such as, how often does the car designer reflect on the environmental effects of the mining industries that produce the raw materials that a car is made from? Does the graphic designer working for a tobacco corporation need to reflect on the effects of death by lung cancer? Does the product designer working for an electronics company need to concern herself about the working conditions of those who will be manufacturing the company's products? Specialization is a useful strategy for ensuring the perpetuation of skills, but the separation of different skill sets from one another can lead to lopsided development

in the material world where, for example, the development of attractive consumer packaging might be in direct conflict with concerns for the environment.

The role that praxis can play in such circumstances is to establish the significance of agency and the ways in which theories inform action and vice versa. Praxis allows the researcher to ask questions about the purpose of theory and action. As Kitching points out, praxis helps to determine 'what is at stake in deciding whether . . . [ideas are] . . . true or false. Or in other words, what follows, what difference does it make in the world if a theory is true or false?' (1988, p. 33).

Praxis as a tool for research

A philosopher like Habermas is interested in explaining existential questions because that is his job. For the researcher, those 'big' questions might seem to be peripheral to the issue being investigated, but the more the researcher understands praxis the clearer his or her understanding of Habermas's characterization of the colonization of the individual designer's or researcher's lifeworld by the ideas and practices that belong to the system becomes. The more the researcher, aware of praxis, reflects on the habitus/field relationship, the clearer it becomes that issues of symbolic and cultural capital are bound up in the maintenance of practice.

Understanding praxis can help the researcher in the following ways:

- By giving the agency of the individual a context. The designer, the researcher and the end user of design exist within a cultural context that has been constructed, no matter how haphazardly, and the individual's personal agency is directly related to the practices that surround him or her.
- By helping to define the context of the individual's practice. What dynamic mix of theory and action, both historical and contemporary, distinguishes the individual's practice from others', or from the dominant model in the field?
- By demonstrating that particular kinds of action are related to particular ways of thinking, and vice versa. This means that different models of the conception of individuals and their relationship to practice can be understood more clearly. Praxis can help the researcher define habitus and field by observing the formation of practice. It can also help the researcher to understand the relationship of the lifeworld to the systems that colonise it by identifying how dominant practices are formed and validated and then identifying ways in which the lifeworld can resist acts of colonization.
- By helping to determine the ways in which the context of the user of design frames the way in which that individual responds functionally, emotionally and intellectually to designed objects or systems.
- By giving the need for an object a social context. The purpose and consumption of designed objects rests within a complicated network of sometimes conflicting demands.
- By giving the need for a system a context. The purpose and consumption of designed systems rests within a complicated network of sometimes conflicting demands.
- By exposing the researcher to a reflexive engagement with the practical, theoretical and ethical issues of research practice.

- By facilitating the researcher's understanding of the complex relationship between the ideological circumstances of the observer and the observed.
- By encouraging researchers to examine their own theoretical positioning and how that informs their practices.

Praxis is a way of framing the consequences of designing objects and systems

In design, the result of practice is tangible. Design effects social change whether through systems of management or through the production of objects. By returning to praxis as a way of understanding action, it should be clear that thinking and doing result in action which then has a consequence. Researchers investigate the consequences of designing as often as they research the formation of the design.

Praxis can be used as a way of understanding both agency and the consequences of agency. Agency is social and if change is enacted in the world it has consequences that are both material and ethical. This is at the core of the philosophy of praxis. Theorizing and acting in conscious union leads to tangible outcomes, and to ignore the consequences of what is designed is to neglect the conclusion of the design process. The philosophy of praxis would suggest that the role of the researcher is not only to research the nature of design but also to contribute to the formation of ideas about what design is for.

Praxis suggests that the individual is neither completely passive, nor completely free. If modern consumer culture itself is based on this principle, and the British sociologist Anthony Giddens has argued this case for some decades, then it follows that the researcher into design needs to find tactics to determine his or her own position so that the ideas of praxis can be used strategically and to one's advantage. The next sections of this chapter look at the ideas of reflection and reflexivity with this intent in mind.

Reflection

Reflecting on what we have learned in order to develop and apply that knowledge further is an essential part of practice. The term reflection is one that the reader will find constant reference to in research texts. Like the idea of tacit knowledge, it is a concept that is related to ways of understanding that are difficult to categorize as the simple acquisition of knowledge through deduction and/or induction. Jean Paul Sartre spends several hundred pages in his book *Being and Nothingness* examining the process of reflection and how it contributes to the idea of how we know what we are. We can grasp enthusiastically just one sentence: 'Reflection is a knowledge; of that there is no doubt' (2000, p. 155). This idea of reflection as a special way of understanding—that is, in Sartre's words, 'a lightning intuition . . . without a point of departure and without a point of arrival' (p. 155)—has occupied those interested in both reflecting on others' practice and reflecting on one's own.

Reflection is a skill and can be learned. In 1983, Donald Schön wrote an influential book called *The Reflective Practitioner: How Professionals Think in Action* (1983), in which he discussed the ways in which reflection, action and knowledge are related. In the decades since, his ideas have continued to be developed and are now particularly significant in the fields of education, nursing, health sciences and architectural design. His ideas are useful to the researcher into design, because Schön's perspective on professional practice was informed from a philosophical and design background. What made his ideas so influential was his drawing together of existing ideas about creativity, practice and knowledge into a coherent body of thought that could be applied as a critical strategy. Like all the other models of conceptualizing the world we have examined up to this point, his ideas are continually analysed and open to different interpretations, some supportive (Waks, 2001) and some not (Webster, 2008). Schön's interest in conceptualizing design processes emerged from his interest in technology and the technological state. His realization, which was not a new one but which is important in contextualizing his practice, was that the modern technological state was in a constant state of dynamic change and to attempt to find finite solutions to social issues caused by endless change was flawed (Schön, 1973). We can think of this insight as one that reinforces the relevance of the wicked problem. Just as the wicked problem is unsolvable and the recognition of this fact allows the designer to think about solutions as being strategic and contingent, so too the recognition that social structures are in a state of flux suggests that discovering solutions to problems needs to be flexible and strategic.

What is especially important about his theorizing of praxis is his introduction of the terms 'reflection on' and 'reflection in' practice. Reflection on practice is when the practitioner has finished a task and is able to spend time considering why decisions were made the way they were or people behaved in the way they did. This could be a researcher or a designer reflecting on a completed project. The phrase implies an engagement with a set of circumstances or facts summing up events in which 'the unfamiliar, unique situation' is seen as 'both similar to and different from the familiar one, without at first being able to say similar or different with respect to what' (Schön, 1983, p. 138) in order to gain a fresh perspective. This ability to be reflective requires an understanding of how individuals learn, how information is gathered and how knowledge is constructed. Just as we have suggested that abductive thinking is a process linked to other circumstances (a well rehearsed body of knowledge to draw from, the ability to make connections between seemingly separate things), reflection too requires an understanding of its broader contexts for it to be used productively.

Reflection in practice requires the ability to think about 'doing' while one is engaged in the process of doing. This is especially important when the individual is working in what Schön calls the 'indeterminate zone' (1987, p. 12) of practice where there is ambiguity and instability. It is at this point that drawing from our experience but thinking in fresh ways and reinterpreting information become essential if new knowledge, the outcome of research, is to be produced.

Both reflection on and reflection in practice are ways of thinking and interpreting, but Schön has been criticized for not making the *critical* aspect of his modes of reflection more explicit. Schön's conception of reflection is limited because it operates within the parameters of practice and does not question the social conventions that have created the circumstances of practice itself (Usher & Johnston, 1997, p. 147). The examples of reflection Schön uses in his texts involve reflection about practice at an individual level. This is important because the individual is important, but if we also frame practice in terms of habitus and field or lifeworld and system we know that practice is bigger than the individual engaged in it and that practices are contested and contestable. It is important at this point to remember that the purpose of research varies, and that sometimes the researcher's aim is not just to interpret but also to critique.

Critical reflection is a form of praxis, where the observations, ideas and theories that have emerged from the research undertaken are given the potential to facilitate change or become agents of change. We can characterize the process and development of reflection as follows:

Identifying.

- What is the object (experience/topic/data) of your reflection?
- What is the purpose of your reflection?

Describing.

- What are the objective circumstances surrounding the object of your reflection?
- What is the structure/framework/sequence of the object of your reflection?
- What is the context of the object of your reflection?

Analysing.

- Breaking data into its component parts.
- Giving structure to data.

Interpreting and synthesizing.

- Comparing and contrasting new data and meanings with existing data, ideas, meanings and theories in the field.
- Making meaning of data by relating new data to what is already known and creating a context from:
 - Existing ideas.
 - Existing theories.

Revising existing ideas by:

- Identifying the value of other perspectives.
- Reordering theory in the light of new data and ideas.
- Building new theory.

Acting.

- Establishing a response to the meanings derived from the data reflected on.
- Formulating different ways of acting.
- Initiating action.

Another model of conceptualizing reflection that the researcher might encounter was developed by David Kolb (1984). This model of what he called the 'experiential learning' cycle is a continuous cycle of theorizing, action, observation and

reflection. It forms the basis for theorizing the production of learning, which we can easily adapt to a way of generating new knowledge by the researcher. In this endless cycle, where action is informed through theorizing after observation and reflection, new knowledge is created when new action is informed through the theorizing of old experience. The cyclical nature of this process, where old experiences and understandings are changed into similar but new ones, means that the cycle is not a 'flat' one but rather a three-dimensional spiral where each time the process is repeated a new cycle is created.

In using models of reflection on and in practice, the researcher is not just looking backwards in order to understand what has happened, but is also finding ways of looking forward. These ways of thinking are techniques that assist not just in consolidating past experience and knowledge but also help in anticipating new events. Reflection needs to be distinguished from critical reflection because one stays within the confines of a system of practice while the other leads directly to praxis. Reflexivity is a way of thinking about reflection that puts reflection into action, and acts as a concept that can unify many of the points that we have raised in the first part of this book.

Reflexivity

We have been using the term reflexivity since our first introduction of it as a way of framing the concept that when individuals act they are also acted upon. This idea is from Anthony Giddens's book *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Giddens's purpose in writing his book was to demonstrate the effects that modern institutions have on moulding our sense of who we are. We have raised his ideas because they are central to an understanding of research as a mechanism which both responds to the world as it exists and also has the potential to alter it. The point that Giddens raises about the empowered individual also has a direct relationship to the empowered researcher:

Just as the self is not a passive entity, determined by external influences, in forging their self-identities, no matter how local their specific contexts of action, individuals contribute to and directly promote social influences that are global in their consequences and implications. (1991, p. 2)

We wish to talk about reflexivity in two ways. Firstly we develop our discussion about Giddens's concept of the dynamic relationship between the individual institutional practices and how reflexivity is directly related to praxis, and then we address the key role that reflexivity plays in the research process.

Giddens's premise is that 'the narrative of self-identity has to be shaped, altered and reflexively sustained in relation to rapidly changing circumstances of social life, on a local and global scale.' The reason for this is that unless individuals can

understand their lives as unfolding against a 'backdrop of shifting social events' they will be unable to claim their 'authenticity' (1991, p. 215). What Giddens means by this is that the individual evolves from a complex (and sometimes difficult) relationship with the world of institutions. Unless individuals understand this they will never be fully autonomous (or have a real sense of who they are) because they have neglected this fundamental aspect of how they were formed. When Giddens talks of the self-actualization of the individual or of writing the 'narrative of the self', what he is referring to is the need for individuals to contextualize themselves.

Giddens's view of the power of individuals to emancipate themselves is a very optimistic one. Bourdieu's view of how the habitus and field work together suggests a much tighter space for individual manoeuvring. Struggle in the field 'pits those in dominant positions against those in subordinate positions' (Swartz, 1997, p. 124). Bourdieu also talks of the antagonism between the curators and the creators of culture, and suggests that recognition in the field demands the adoption of the field's values. Bourdieu's observations on the nature of power in the field suggest that 'for fields to operate there must be agents with the appropriate habitus to make them capable and willing to invest in certain fields' (Swartz, 1997, p. 126). Giddens holds the more optimistic view that agents can *change* institutional values (or field activity) by engaging with it. This is obviously contestable.

Giddens also identifies another problem in the project of the reflexive self, and that is the confusion between the struggle for self-identity and narcissism. The struggle for self-identity is part of a struggle for emancipation, whereas narcissism is the 'pre-occupation with the self which prevents the individual from establishing valid boundaries between self and external worlds' (1991, p. 170). Karl Maton (2003) has attempted to categorize the different ways in which reflexivity has been enacted because of the elision between an empowering form of reflexivity and what he sees as a narcissistic adaption of it.

'The road to reflexive practice is paved with good intentions', suggests Maton, '[h]owever, theoretical intentions are one thing, research effects are another' (2003, p. 56). One role of reflexivity as constructed by Giddens is one of self-awareness through social positioning, but it is the emphasis on self-awareness at the expense of the construction of social meaning that bothers Maton.

There is, indeed, no logical reason for why anything about the author should be excluded from the discussion. For example, autobiographical reflection might include one's childhood or what one did on holiday, and as a virtuous researcher I could make public not only that I am Caucasian or male or heterosexual but also that I am 5'7' tall, support Manchester United, and live with two cats. (2003, p. 56)

Underneath Maton's pantomime performance there is a valid point that addresses both the position of the individual along the self-actualization/narcissism continuum and the purpose of that positioning. There is a difference between using

reflexivity as personal praxis and using reflexivity as a research tool. It is important to conceptualize the relationship between the reflexive individual and the reflexive practitioner, in our instance, the researcher. In both these circumstances—the struggle for self-identity and the adoption of a reflexive position as a researcher—the central concept remains that individuals are in a dialogue with the institutions that form them. In both cases that relationship is one that enables praxis, for action is informed through a theorizing of the individual's position. The difference lies in the purpose of the praxis. For the reflexive individual concerned with their agency, praxis is about change in habitus. For the researcher, there are two possibilities. The praxis could be about change in personal practice and/or could mean acting as an agent of change in the field.

We could develop our definition of the purpose of reflexivity within the field of research to say that reflexivity is a way of addressing the process by which knowledge is constructed. To be a reflexive researcher is to understand that the position of the researcher shapes the nature of research. Reflexive researchers attempt to understand how their habitus informs:

- How their own experiences frame the way in which they understand the world. This understanding might be one informed by ideologies of race, class or gender. It might be informed by geographical location and how that affects their worldview, or it might be informed by a set of normalized practices.
- How their own experiences frame their sense of agency.
- How their worldview might affect the framing of the purpose of the research.
- How their worldview might affect the framing of the research question.
- How their worldview might affect the gathering of data.
- How their worldview might affect the analysis of the data.
- How their worldview might affect the interpretation of data.
- How their worldview might affect the way in which their research is communicated.
- Their praxis in applying their findings.

An understanding of reflexivity allows the researcher to reflexively engage with the experiential learning cycle of theorizing, action, observation and reflection and the dynamic cyclical relationship of cause and effect. An understanding of reflexivity allows researchers to situate themselves simultaneously within both habitus and field.

Another way to frame reflexivity: agency, disposition and context

A final way of understanding the functioning of the reflexive researcher and the benefits to the researcher of thinking reflexively is to frame reflexivity within three sociological concepts: agency, disposition and context. The concept of agency, the ability to act and the ability to conceive of action, is important to the researcher.

Firstly, individual practitioners need to be able to position themselves within a community of practice. Without this ability they will remain unable to draw from and contribute to a shared body of knowledge. Secondly, understanding the processes of reflexivity assists in understanding the praxis of those being researched. The agency of others is bound up in their reflexive engagement with the institutions and practices of their field, and one cannot fully understand this until one understands how one's own self is constructed in this way.

The engagement of the individual with institutional practices and values is not purely deterministic, and not mechanistic. The value of the concept of reflexivity is that it acknowledges the disposition, or the inclination, or the characteristic tendencies of the individual. Reflexivity allows us to acknowledge that habitus and the predispositions it gives the individual can determine action. For example, a designer with a family background in making his or her own clothes becomes a textile designer because this interest was stimulated in early childhood, but this does not mean everyone whose family makes clothes becomes a fashion designer. Disposition is sometimes reinforced by institutional circumstances and is sometimes challenged by them. Reflexivity can be understood as the dialogue between disposition and agency as well as that between habitus and field or lifeworld and system.

Understanding the context within which disposition is formed and agency takes place completes the dialectical relationship between disposition and agency. These contexts can range from the environment of a design company, to a design culture disseminated through the university system, through to the mass media. Contexts are not always supportive and are often complex and contradictory. In his essay 'Design and Reflexivity', the Dutch designer Jan van Toorn describes a design industry whose context is one of maintaining the status quo:

Every professional practice operates in a state of schizophrenia, in a situation full of inescapable contradictions. So too communicative design, which traditionally views its own action as serving the public interest, but which is engaged at the same time in the private interests of clients and media. To secure its existence, design, like other practical intellectual professions, must constantly strive to neutralise these inherent conflicts of interest by developing a mediating concept aimed at consensus. This always comes down to a reconciliation with the present state of social relations; in other words, to accepting the world image of the established order as the context for its own action. (1994, p. 319)

In understanding the context of the object of research, the context that allows researchers to research can be defined, as can the context that allows researchers to disseminate their research within their community of practice. Such practices, as we have already examined, are always open to contestation. The researcher needs to be mindful that even though the need to initiate change might be identified by research, that change might not be forthcoming.

As has been shown in this chapter, the researcher's agency is bound up in a multitude of interacting concepts and material circumstances. An understanding of one's own agency allows the researcher an insight into the processes by which other circumstances and other concepts are generated. In the following chapters we will discuss the capacities and intellectual processes needed to develop this insight and turn it from something that generally addresses the circumstances of knowledge acquisition to the very specific generation of new knowledge. We will raise new sets of questions about the purpose of research and how we conduct it and develop the idea that our disposition and our theorizing, which are the result of praxis and reflexively engaging with it, can be turned into methods of researching.

This point on the focus of this book is how to do research in design. In the chapters we explored ideas about the transformation of research into design, what designers do, and about the practical and theoretical relationships between design and research. This chapter looks in detail at how to do research, and what is meant by a research methodology.

What is a research methodology?

When 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 series of decisions—where do you want to go, where are you going, before you begin—so, too, does a research project. Where do you want the research to take you? What are the core questions that you want the research to answer? This is not to say that early decisions about your research can't be changed. Much research is characterized by "false starts, dead ends, and retreats," 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—about methods and epistemological decisions—will follow naturally. It is useful to think of a methodology as a map for the research journey.

It is useful to begin thinking about methodology early in your research project. Methodological choices are hallmarks of a successful project, so we want to know what these methodological choices made? The analogy of a map can be used to describe methodology. Just as a methodology can also be thought of as the line that which to begin to construct (or map out) the research. The methodology then guides the whole project, from data gathering through analysis to the 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 are combined together to articulate ways it is helpful to conceive these into their components, and research question, which influences the other components.