THE DEVELOPMENT OF STUDENTS' EXPERIENCES OF LEARNING IN HIGHER EDUCATION

Carol Helen Bond

A thesis submitted in fulfilment of the requirements of the degree of Doctor of Philosophy within the School of Curriculum, Teaching and Learning, Faculty of Education, Griffith University.

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ABSTRACT

This thesis is concerned with the development of tertiary students' experiences of learning as they progress through three years of undergraduate study in two different psychology programs. Previous research that is relevant to this topic has tended to focus either more narrowly on the development of epistemic beliefs or more broadly on the variation of learners' experiences of learning. Research on epistemic beliefs has tended to focus on the structural aspects (stages) of development and to ignore the content of thinking. In contrast, research on experiences of learning has concentrated upon the content of students' experiences, yet it can be criticised for the way in which it decontextualises students' experiences and for its limited attention to change and development. Moreover, despite evidence suggesting that learning comprises a complex of phenomena such as understanding, memorising and knowing, this line of research has tended to treat learning as a single phenomenon.

In the thesis I draw on Gadamer's philosophical hermeneutics, Gurwitsch's view of awareness, and much of the conceptual framework of the phenomenographic perspective to argue a case for a theoretical framework and consequential practices that are more plural and inclusive of learner's experiences of learning. The new approach refocuses the relationship between researcher, knower and known in terms of the knowing relation—one that involves a dynamic iterative interweaving of first and second order perspectives. Using this new approach, students' experiences are analysed to provide rich description and ontological explanation of both change and development over time. The approach allows the unity of the part/whole/part relation of an individual's experience to be recognised. So the method is able to take account of the contextual relevancy of the individual whilst also focusing on the experiences of the group.

The results show that rather than comprising a single phenomenon, learning is itself part of a multi-dimensional (depth, spatial and temporal dimensions), multi-phenomenal field. The phenomena of learning, understanding, memorising and knowledge are described in detail, and their individual internal relations are elaborated along with the internal relations between the phenomena. Four main groups of experiences of learning are described within this framework: reproductive experiences; relational experiences; constructive experiences; and transformative experiences. Each of these categories comprises several sub-
categories. This fine-grained focus on individual students' data, and the use of the phenomenographic what/how framework, allows the development of experiences to be traced and interpreted as a gradual morphing over time. The pattern of development suggests that each part of the learners' journey plays an important role in the growth of skill and competence in learning. Thus, it may be important that curricula account for variation not by focusing upon transformative experiences of learning, as is often the case, but by facilitating shifts through all of the experiences that learners may pass through.
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STATEMENT OF ORIGINALITY

This thesis describes original work undertaken in the School of Curriculum, Teaching and Learning at Griffith University. The work has not previously been submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

Signed:
Overview

In Chapter 1, I set the scene for a study that is concerned with the development of students' experiences of learning and understanding. I argue also for a notion of research that reflects such development. I relate the phenomena of *experience, learning* and *understanding* to the whole/part/whole iteration that comprises the Gadamerian interpretation of hermeneutic circle. This foray into hermeneutic philosophy provides the philosophical ground for my interpretation of the literature and the methodology that is adopted in later chapters. It also allows me to draw attention to the parallels between the pattern of development that is evident in the historical treatment of understanding in hermeneutic thought and that which is evident in the development of learners' experiences of learning and understanding in this study.
CHAPTER 1
AN INTRODUCTION TO THE DEVELOPMENT OF STUDENTS' EXPERIENCES OF LEARNING

...every experience has something of an adventure about it. An adventure ... interrupts the customary course of events, but is positively and significantly related to the context which it interrupts. Thus an adventure lets life be felt of as a whole, in its breadth and in its strength. It ventures out into the uncertain (Gadamer, 1989, p. 69).

Research as an Experience of Learning and Understanding

I have a favourite headland where I walk by the sea. It provides me with an infinite variety of experiences with its changing moods and qualities, varying hues, and myriads of sounds. It is a place at peace with itself and when I walk there I experience its wholeness and feel myself in relation with it and its creatures. So I visit with seals, fly, in my imagination, with black backed gulls and shags, or with luck, watch dolphins as they go about their daily tasks. My experiences with the sea and its creatures mirror my experiences of this study. It too has provided me with an infinite variety of changing scenes and emotions, the richness of which I shall never be able to capture on paper. Before I venture into its depths I explore briefly this notion of research as lived experience because it provides a backdrop for the thesis.

Metaphorically, Gadamer's (1989) description of experience as adventure, venturing out into the uncertain, captures the spirit of the study, and particularly the way in which it evolved. I liken this notion of experience to that of Simmel (in Gadamer, 1989, p. 69) who believed that it "not only becomes an image and idea, as in knowing, but an element of the life process itself" in that "every experience has something of an adventure about it." This conception of experience resembles the hermeneutic idea of being as event (Crusius, 1991) that is discussed below and elaborated in this and later chapters. My experience of walking on my headland provides an analogy. Gadamer (1989, p. 68) offers further explanation when he argues that the relation of "life to experience is not that of a universal to a particular. Rather, the unity of experience, as determined by its intentional content, stands in an immediate relationship to the whole, to the totality of life." So adventure as lived experience is an integral aspect of the totality of our lives. Yet it provides us with a sense of newness in relation to the things we have known and it is through our awareness of this sense of newness in lived experience that the processes of learning and understanding are facilitated.
Chapter 1: An Introduction to the Development of Students' Experiences of Learning

Gadamer (1989) argues that the experience of this kind of newness in relation to the thing we originally set out to understand is gained through a process of dialogic interplay between historical awareness, phronesis or thoughtful reasoning, and praxis. This view of the process of understanding as *coming to know* is a theme of the thesis. It captures my own processes in terms of how I conducted the research and how I have attempted to present its outcomes.

Like Gadamer's (1989) notion of the hermeneutic circle, the progress of the study assumed a coherent unity through an iterative movement between whole and parts, and parts and whole: an increasing spiral of multiple layers of meaning (Hoy, 1978). For example, in the initial stages of the study I adopted a phenomenographic (Marton, 1981) approach to explore the participants' *conceptions* of learning. In line with this tradition, the study was framed around interviews with first year university students who were questioned about their understanding of learning. It seemed at the time to be a very straightforward, ordinary kind of project. However, I was mistaken. The data that were generated by this first phase suggested the need for a different approach, a new design, and the development of a more substantial philosophical base. What became evident in different aspects of the initial work (the parts) provided a picture of the potential for a new whole—a new referent. Later, the learning that derived from the use of the new approach challenged my original assumptions to the extent that I developed a new way of thinking about the parts and the whole of the study. Thus, as each new focus emerged it became structurally integrated into my thinking. This characterisation of research as generation and integration provides a picture of a developmental spiral of experience that mirrors Gadamer's (1989) notion of hermeneutic understanding. I draw attention to the process because the sequence of movement from referent to structural integration is evident also in the data and comprises one outcome of the study. The consequences of such a process are evident in the research, in that, the philosophical basis that is presented in this chapter, evolved as the study evolved. For instance, it did not make a great contribution to the study's initial design. However, the thesis is written from the framework of my new learning, for as the participants in the study indicated, once one understands, one can only see the world from the position that includes the integration of that new understanding.

This chapter, and those that follow, tell the story of the development of participants' (including my own) experiences of learning and understanding. The
thesis focuses on university students' experiences as they progress through three years of study in two different psychology degree programs. Based on previous research I assume that learning is multi-phenomenal in that it includes experiences like learning, understanding, memorising, remembering, meaning and knowledge. Thus, the thesis is also concerned with the philosophical and methodological issues associated with the exploration of such experiences. In this chapter, I set the philosophical ground for the narration of these experiences. I focus first on my interpretation of story and experience and then I elaborate a notion of understanding that underpins the thesis.

I use the word *story* to reflect and emphasise the narrative nature of my, and the other participants' experiences. I have tried to tell it in language that uncompromisingly has a ring of truth about it. My intention is to do justice to our multiple voices by helping others to see and understand (Eisner, 1991). This notion of voice is important in terms of enhancing our knowledge of pedagogy. It is also of significance in the way that it serves the epistemological interests of the research through the provision of communicative honesty (Eisner, 1991). It is based upon the idea that the form in which something is communicated not only influences what can be told but also what others experience of its telling (Eisner, 1991). A simple instance of this is my use of the personal pronoun when I wish to emphasise my voice just as I use the participants' voices to tell their stories.

In his philosophical hermeneutics, Gadamer's purpose was to "describe the activity of understanding in general ... not only the understanding of a particular subject matter but also the self-understanding of the inquiry, which conditions the questions asked and hence the conclusions" (Hoy, 1978, p. 51). He requires the interpreter\(^1\) to have a better *self-understanding* before assuming a knowing relation with the phenomenon that is to be understood (Gadamer, 1989). This notion suggests that we as researchers must understand our own beliefs and perspectives before we attempt to interpret or understand those of others. Consequently, this chapter provides the philosophical ground for my exploration of the literature on learning and understanding. It is an explication of my self-understanding and the perspectives that I bring to this research. Lakatos (in Bernstein, 1983, p. 77) argues that effective critique begins with the research *program*—"something which is not static but which develops and changes over

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\(^1\) Used hereafter as the person who is attempting to understand.
time." Accordingly, I have adopted an approach that focuses on the conflict between theories or paradigms in their historical development (Bernstein, 1983) in the hope that "many new characteristics and problems of ... inquiry come into the foreground" (Bernstein, 1983, p. 77).

In the European continental tradition, hermeneutics has been broadly defined as "the study of understanding" (Palmer, 1969, p. 8). The substance of this study is about learning, so understanding is a central focus in terms of the topic and the method. As the analysis evolved, what became evident in the data was a pattern of development of learning and understanding that appears to mirror the historical treatment of understanding in hermeneutic thought. The two sets of experiences are summarised in Table 1.1 to illustrate the parallels. The table shows how the two patterns of development of experiences from reproductive, to experiential, to transformational are almost synonymous. Parallels can also be drawn between changes in the notion of understanding in hermeneutics and the variation that is evident in contemporary research on experiences of learning (e.g., Marton, Dall’Alba & Beaty, 1993). Given these observations and the focus on understanding, it seems fitting to trace historical experiences of the phenomenon of understanding through the lens of the hermeneutic perspective. What follows sets the scene for the remainder of the thesis in that it provides a philosophical backdrop for the elaboration of the pattern development that emerges in Chapters 5-8.

Table 1.1: A Comparison of the Development of Hermeneutic Experiences of Understanding and Experiences of Learning of the Participants in the Study

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<td>Understanding as a creative act</td>
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1. Learning as personal change and development
Chapter 1: An Introduction to the Development of Students' Experiences of Learning

Historical Experiences of Understanding: A Brief Outline

The lineage of the word *hermeneutic* is pantheistic, comprising characteristics ascribed to the Greek god Hermes, whose role was to deliver the messages of the gods to mortals. The task required that he understand and interpret the gods' intentions (Mueller-Vollmer, 1986). Interestingly, given contemporary critique of the nature of phenomenology and hermeneutics, Hermes was known for the fact that he did not always convey truth (Hoy, 1978). Modern hermeneutics derives from a tradition of interpretation that has its roots in Socratic rhetoric (Hoy, 1978) and the notion of Aristotelian logic of statements and their relation to grammatical structure (Mueller-Vollmer, 1986).

Historically, the phenomenon of *understanding* assumes a range of different meanings. In the following outline, we see first, a conception of understanding as interpretation that consists of reproduction and a focus on method. The main concern is *how* something is interpreted in terms of the use of procedures to obtain a correct but acontextual and impersonal interpretation. In the nineteenth century the focus changes to a notion of understanding that is both individual, but also related to context and historical time. Questions focus on epistemology: how we *come* to understand or know something and how we can be sure that what we understand is the truth. The foundation for this more psychological conception of understanding provides the ground for the issues that continue to be evident in contemporary hermeneutics and phenomenology. In the late twentieth century, the experience of understanding is conceptualised in terms of *what* it is that is known. Thus its meaning shifts from concerns with epistemology to those of ontology and understanding is synonymous with social, communal world views that are inseparable from the substance of our lives.

Interpretation as Reproduction

The word hermeneutic appears in Aristotle's work *Peri Hermeneias* which deals with the way in which the grammatical structure of speech is used to convey "the character of things" (Mueller-Vollmer, 1986, p. 1). However, it was not until the Renaissance that the tradition of interpretation started to develop into a knowledge

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2 This section conveys main themes that have a bearing on the research that follows. It is brief in the sense that the extensive range of philosophical thinking from which it is drawn falls outside the limits of both this study and my experience of philosophy.
area. In Europe at that time it became an integral aspect of three different but related movements: Middle Ages theology, classical philology, and jurisprudence. For instance, in the form of protestant hermeneutics, biblical interpretation became the tool by which reformers perceived that they could free themselves from the constraints and authority of the catholic church. Classical philology (the historical antecedent of the science of language) developed out of a renewed interest in establishing the authenticity of Greek and Roman literature. Similarly, in the 1400s, legal hermeneutics evolved out of renewed interest in the interpretation of Roman law (Mueller-Vollmer, 1986). In all three areas, ancient writing assumes an authority status and the purpose of interpretation was that of doctrine. So understanding was concerned with establishing the authenticity of a given text, and its correct translation according to the correct grammatical interpretation of the original version (Mueller-Vollmer, 1986). For these interpreters, the object of interpretation was the achievement of literal sense in terms of the etymological origins of the word and sentence. Thus, the act of interpretation was one of reproduction.

**Interpretation as the Application of Rules: Pragmatic Hermeneutics**

These early classical philological-critical methods became the basis for "the development of systematic theories of interpretation" (Mueller-Vollmer, 1986, p. 2) that were in use until the eighteenth century. However, the advent of the Enlightenment and the primacy given to reason challenged the authorial premise of biblical and legal interpretative traditions (Gadamer, 1989). With its focus on the need for objective knowledge, and its teleological view of history, dogmatic truth claims accorded to the scriptures could no longer be sustained (Gadamer, 1989). The focus of interpretation changed from that of grammatical structure to authorial intention. This notion of intention differs from its modern philosophical counterpart. Intention was concerned with the "degree to which its author had succeeded in adhering to the generic requirements of the particular discourse he had chosen" (Wolff, in Mueller-Vollmer, 1986, p. 4). Thus the object of interpretation was an explication of the rules of the discourse and the act became a renewed application of those rules.

The interpreter Chladenius provides an example. In 1742, in his *Introduction to the Correct Interpretation of Reasonable Discourses and Books*, he formulated a theory and a set of practical rules that could be used by disciplines such as poetry, rhetoric and history, whose knowledge derived from
interpretation (Mueller-Vollmer, 1986, p. 5). Chladenius distinguished between these disciplines and philosophy. Poetry, rhetoric and history were concerned with the interpretation of the meaning of statements while the role of philosophy was a critique of what was claimed to be true (Mueller-Vollmer, 1986). Thus, there appears to be two distinct components to what we now more commonly see as understanding. For example, the purpose of interpretation was the pragmatic mastery of a given area of knowledge: the use of unchangeable rules of reason in order to understand (Mueller-Vollmer, 1986). Hermeneutics was the application of rules, techniques or strategies, to the parts of a given work that were difficult to understand, in order to obtain a "perfect or complete understanding" (Mueller-Vollmer, 1986, p. 5). Chladenius acknowledged that different interpreters may gain different understandings of a particular author's point of view. However this notion of point of view or perspective was concerned with the relativity of the interpreter's account rather than that of the original text which could not be questioned. So the interpreter's task was to find the true meaning (Mueller-Vollmer, 1986). Nevertheless, this distinction between interpretation, and hermeneutics as understanding, placed hermeneutics in the domain of philosophy.

Reproductive Understanding or Hermeneutics in Transition?

On the whole, the development of modern philosophical hermeneutics owes its beginnings to Schleiermacher and his student, Dilthey. Their work marks a transition point whereby conceptions of understanding change from interpretation as reproduction of the written word, to more substantial forms of thinking in which the isolation of the processes of understanding are the immediate focus of attention in the hermeneutic task (Gadamer, 1989). Several aspects of Schleiermacher's work have significance for qualitative research in general, and for this study in particular.

Schleiermacher argued that hermeneutics was "the art of understanding" (in Palmer, 1969, p. 84) and not merely a mechanical activity. Thus the purpose of the hermeneutic process is to bring understanding to completion just like a work of art (Gadamer, 1989). Schleiermacher asserted that the philological approach, with its focus on the pragmatic problems and strategies of interpretation that were outlined above, illuminated only the superficial or grammatical aspects of the text rather than the deeper and more spiritual levels of the author's work (Howard, 1982). In contrast, Schleiermacher conceived understanding to be a circular act of re-experiencing or reconstructing the work as it was constituted in its original
context (Gadamer, 1989). This process of understanding is characterised as the hermeneutic circle.

In general, the hermeneutic circle comprises the following. Understanding always requires a referent. What is understood is:

...a system of unities, or circles made up of parts. The circle as a whole defines the individual part, and the parts together form the circle. A whole sentence, for instance, is a unity. We understand the meaning of an individual word by seeing it in reference to the whole of the sentence; and reciprocally, the sentence's meaning as a whole is dependent on the meaning of the individual words (Palmer, 1969, p. 87).

This circularity is true also of understanding a whole work in the context of its genre and vice versa (Gadamer, 1989). Each part of the author's work possesses an "inner dynamic" (Howard, 1982, p. 10) that manifests the meaning of the whole. Thus the act of understanding involves a circular, dialectical interaction between parts and whole. The interpreter begins with a part and in it seeks the meaning of its whole through a constant part-whole-part movement that "begins where it will end" (Howard, 1982, p. 10).

In his explication of the hermeneutic circle Schleiermacher draws on both rhetorical and hermeneutic traditions. For example, the sixteenth century protestant theorist Flacius, who laid down guidelines for the interpretation of the scriptures, argued that such texts had their own internal coherence and continuity. Using the simile of caput and membra (head and limbs) (Gadamer, 1989), he argued that the role of the interpreter was to "explicate each individual passage in the light of the whole continuity of the Scriptures" (in Mueller-Vollmer, 1986, p. 2) in terms of its literal grammatical content. Schleiermacher extended this idea to an understanding of the text that included both the grammatical meaning of the language, and its interpretation in terms of the individuality of the author according to culture and context (Gadamer, 1989). His account of the hermeneutic circle derives from this notion that "every structure of thought" is an element in the total context of the author's life (Gadamer, 1989, p. 190). Thus, like earlier notions of interpretation, the locus of understanding remains with the work (art or literature) or the author but here Schleiermacher applies the hermeneutic circle as a framework for psychological understanding.
Palmer (1969) outlines the contradiction inherent in Schleiermacher's account of the circle. It appears as an alternative version of the Meno's paradox. To grasp the whole before understanding the parts makes understanding impossible. Yet Schleiermacher explains this through his psychological notion of divination. The original work was created through processes of genius and divination. Similarly, its understanding (including a comparative act) requires a leap of faith that is intuitive and divinatory (Palmer, 1969). Moreover, unlike the more static conceptions of the sixteenth century, the circle is constantly expanding because the total context of the author's life assumes a more relative character (Gadamer, 1989).

This idea of constantly expanding understanding introduces another aspect of hermeneutics that is significant for this study. Schleiermacher claims that "the aim [of hermeneutics] is to understand a writer better than he understood himself" (Gadamer, 1989, p. 192). This is an assertion that has often been misunderstood. Gadamer (1989, p. 192) argues that: "the better understanding ... does not refer to the understanding of the text's subject matter but simply to understanding ... what the author meant and expressed" in terms of its grammatical rules and genre. Moreover, authors seldom explore their own work in terms of the context in which it is located. The idea of achieving a "better" understanding will be revisited in a later section.

Despite his focus on the wider context, Schleiermacher sees understanding as the need only to "put oneself on the same level as the [original] author, whereby the text is revealed as a unique manifestation of the author's life" (Gadamer, 1989, p. 191). Unlike his successor, Dilthey, he uses the hermeneutic circle as a schema rather than a principle. Moreover, for him, the loss of the individual is an issue but the historical location of the event is unproblematical (Gadamer, 1989). Nevertheless, Schleiermacher's work represents a shift to a psychological, more subjective, focus which has had a strong influence on the development of hermeneutics and continues to be evident today in areas like phenomenology (Gadamer, 1989). In contrast to earlier conceptions of the phenomenon, Schleiermacher also opened the way for the development of an integrated theory of interpretation and understanding that assumes a dialogical relation between speaker or author and hearer or reader (Palmer, 1969). Despite these advances, Gadamer (1989) understood Schleiermacher's theory as reproductive understanding, that is, the reproduction of the original production.
Understanding as Lived Experience: Concerns with Epistemology

Like Schleiermacher, Dilthey's hermeneutic interest was the re-construction or re-experience of another's "inner world of experience" (Palmer, 1969, p. 104). Yet his approach to the question of understanding extended beyond the individual and psychological and strongly influenced twentieth century philosophy and qualitative research. His work needs to be understood in the context of his time.

The generation of knowledge in the human sciences in the latter half of the nineteenth century was dominated by the reductionist methods of logical positivism in the natural sciences. Predominant questions were epistemological, concerned with claims of truth and the subject/object dichotomy (Gadamer, 1989). For example, "how the subject, filled with his [sic] own representations, knows the external world and can be certain of its reality" (Gadamer, 1976, p. 131). In Dilthey's view, this perspective reduced the spiritual and cultural life of the past into abstract categories: a kind of reification or objectification that alienated them from life as their living source (Gadamer, 1989). Within this context, Dilthey saw his task in terms of the question: how can historical experience that is essentially individual and subjective become a science. So in contrast to Schleiermacher's more methodological concerns, Dilthey focused on the development of a foundation for the human sciences (Gadamer, 1989; Palmer, 1969) that had a more epistemological basis: a change in focus that represents a shift from the psychological to the hermeneutical (Gadamer, 1989). Like his successors Heidegger and Gadamer, Dilthey wanted to understand life from the experience of life itself.

It is Dilthey's concept of experience that forms the basis of his hermeneutic theory (Palmer, 1969). The French word expérience derives from the Latin word experiensia, whose roots lie in experiri, ex - from or out of, and periri - to try (Macdonald, 1972). English usage of experience as both noun and verb is very general. Its meanings range from experiences associated with life and personal history to the more immediate kind that occur from day to day. Dilthey adopted the German term Erlebnis, to capture his notion of lived experience. Erlebnis seems not to have an English counterpart. In contrast to the use of the word experience, Erlebnis is used as a more specific, singular noun that is related to the personal where "what is experienced is always what one has experienced oneself" (Gadamer, 1989, p. 61). The word derives from the verb erleben, (leben—life, and er—emphatic prefix that deepens the meaning of leben) to live (Palmer, 1969)
or "to be still alive when something happens" (Gadamer, 1989, p. 61). Thus Erlebnis suggests "the immediacy with which something real is grasped" (p. 61) felt, or lived rather than something that is given and merely taken in. Further, das Erlebte means the permanent content of what is experienced. So the meaning of Erlebnis for Dilthey is both the transient, personal and thus subjective act of understanding, and the more permanent, objective outcome of that act (Gadamer, 1989). Significantly, (in terms of the way in which data are presented in this study) Erlebnis only came into general usage in Germany in the biographies of artists and poets in the latter third of the nineteenth century (Gadamer, 1989). The purpose of biography was to understand someone's work through an explication of their life: a productive union produced through mediation of act and outcome.

In contrast to Schleiermacher's ahistorical stance, Dilthey's notion of experience can be understood only from an historical standpoint. He sought an approach that would obtain objectively valid interpretations of structures of meaning as "concrete, historical, lived experience" (Palmer, 1969, p. 99). The possibility of hermeneutics being a science rested in the fact that he himself, in his search for understanding of historical events, was an historical being. So "the person studying history is the person making ... [it]." (Gadamer, 1989, p. 222). Erlebnis comprises the relations we make with both the past and future, relations that form an historical, structural unity or context of meaning (Palmer, 1969): a unity of meanings as they are lived and integrated over time (Gadamer, 1989; Palmer, 1969). Thus Erlebnis, as lived experience gives Dilthey's use of historical a temporal quality that means more than a concern with the past. "It is something we live in and through, ... the very attitude we take toward life and in which we live" (Palmer, 1969, p. 108). Lived experience exists in the present:

The way in which 'lived experience' presents itself to me [literally, 'is-there-for-me'] is completely different from the way in which images stand before me. The consciousness of the experience and its constitution are the same: there is no separation between what is there-for-me and what in experience is there-for-me. In other words, the experience does not stand like an object over against its experiencer, but rather its very existence for me is undifferentiated from the whatness which is present for me in it (Dilthey, in Palmer, 1969, p. 108).

Thus, unlike the dominant perspective of the day, in Dilthey's hermeneutics "there are no representative images of objects in consciousness, whose correspondence
to things themselves it is the real problem of epistemology to guarantee. The image we have of things is rather in general the mode in which we are conscious of things themselves" (Gadamer, 1976, p. 131). Experience is not a psychological effect but an intentional relation: it exists only as an experience of something.

Dilthey's notion of Erlebnis can only exist within the context of the hermeneutic circle but it is a form of the hermeneutic circle that responds to both historical and temporal issues, and the dominant epistemological question. The structural coherence of life is defined as a relation between the whole and its parts and as such, it exists before the separation of subject and object (Palmer, 1969). Thus the emphasis for understanding has shifted to life in general rather than the sentence or text. The whole of experience, its unity, is defined by its parts, yet it is the self that experiences, and so the meaning of experience is part of the unity of that self, and it sits in relation to the totality of that life (Gadamer, 1989). For Dilthey meaning is a crucial term: "meaning is what understanding grasps in the essential reciprocal interaction of the whole and parts" (Palmer, 1969, p. 118). Since a person's life is objectified within certain structures of meaning, understanding involves re-integrating those structures "into the spiritual life from which they emerged" (Gadamer, 1989, p. 66). Thus, for Dilthey, Erlebnis became the epistemological basis for constituting an understanding of what has previously been objectified (Gadamer, 1989, p. 66). "What makes historical knowledge possible is the homogeneity of subject and object" (Gadamer, 1989, p. 222). So the hermeneutic circle now assumes historical or temporal characteristics.

This view of the act of understanding as an historical entity moved Dilthey beyond Schleiermacher's psychological characterisation of the individual's structure of experience, to questions of how that experience is grounded within its socio-historical world. It also provides an added dimension to the notion of understanding that was lacking in previous work. However, Gadamer (1989) asserts that Dilthey continued to work within a Cartesian framework and issues associated with subjectivism and objectivism became a constant tension in his work. For instance, he argued that as a structured whole, experience can be distinguished from other experiences, and so it comprises a unit of meaning (Gadamer, 1989) or structures of meaning that can be described phenomenologically as part of a self. So the interpreter steps back from what is to be understood, that is, moves outside of the hermeneutic circle in order to make judgement about the phenomenon (Howard, 1982) and what is to be understood is
objectified (Gadamer, 1989). Thus, the way in which Dilthey formulated his epistemological goals situated him within the same framework as his contemporaries and provided another form of the dualism that he sought to overcome. Moreover, he never fully integrated his idea of lived experience into his theoretical framework and so failed to resolve the epistemological issues (Gadamer, 1989).

The Roots of Understanding as Being-in-the-World

The philosophical hermeneutics of Heidegger and his student, Gadamer developed out of critique of the epistemological issues that Dilthey tried to address (Crusius, 1991), and those that they perceived in the work of Edmund Husserl (Gadamer, 1989). Like Dilthey's philosophy, the development of Edmund Husserl's phenomenology derived from a reaction to the dominant form of positivism (Gadamer, 1976). Husserl wished to establish phenomenology as a rigorous science (Gadamer, 1976). In line with Dilthey's notion of Erlebnis, Husserl also focused on experience as a way in which to overcome the issues of objectivism (Gadamer, 1989). He conceptualised experience as a coherent unity: the organising structure or essence, including a priori presuppositions, that are constituted or given by consciousness (Gadamer, 1976; Polkinghorne, 1983). In contrast to the predominant focus on objective measurement, Husserl saw phenomenology's task as the expression of phenomena as they "bear their meaning within themselves" (Gadamer, 1976, p. 131). Unlike Dilthey, Husserl focused on the subject side of the subject/object dichotomy. Interpretation requires a bracketing or suspension of prior conceptions in order to experience the essence of the text (Magliola, 1989). Understanding is then a "meaning-constituting act" (Mueller-Vollmer, 1986, p. 29). Through reflection the focus or subject is elevated to the status of phenomenon thus separating it from its context. So Husserl's goal of a rigorous science was to be achieved by establishing a basis for generating valid inter-subjective meanings. That is, phenomenology provides access to implicit meanings that can be made available to other subjects. From this perspective, subjective is no longer the opposite of objective because it is itself conceived in objective terms (Gadamer, 1989).

Heidegger drew on the conceptual tools of Husserl's phenomenology, and many of the themes in his thinking can be linked to those of Husserl. However, he problematised the subjectivism inherent in Husserl's approach (Gadamer 1989) and in contrast to the predominant focus on epistemological issues, he argued that
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priority should be given to questions of ontology (Crusius, 1991). Thus his philosophy, sometimes called hermeneutic phenomenology, differs markedly from that of his predecessor (Palmer, 1969).

Heidegger's experience of understanding is best understood in terms of the concept of lifeworld; the whole in which we live as historical beings (Gadamer, 1989) comprising both the past and the possible future. Heidegger sees lifeworld as an inseparable aspect of the self (Palmer, 1969). We understand something in terms of the world. It is part of existence, presupposed in experience and so exists before the separation of subject and object. By removing the epistemological imperative that \textit{being} should be methodologically \textit{derived from} experience, Heidegger was free to pursue his interest in the ontology of experience itself (Gadamer, 1989). Gadamer pursued this line of thinking and extended it to develop contemporary philosophical hermeneutics.

\textbf{Understanding as a Meaningful Whole: a Change of Relation}

Heidegger adopted the term \textit{Verstehen} to denote understanding. The word differs from the English interpretation: to comprehend or grasp the meaning of something. It differs also from Schleiermacher's view of understanding in that it is not an entity possessed by an individual: "a special capacity or gift for feeling into the situation of another person" (Palmer, 1969, p. 131). Nor does it align itself with Dilthey's view that understanding "is the power to grasp the meaning of some 'expression of life' on a deeper level" (p. 131). For Heidegger \textit{Verstehen} is an integral aspect of "\textit{being-in-the-world}" (p. 131). It is "the power to grasp one's own possibilities for being, within the context of the lifeworld in which one exists" (p. 131). So, in line with Heidegger's focus on ontology, understanding itself becomes \textit{being as experience}. It is the mode or structure of existence that enables the act of understanding to occur. Its ground or substance is meaningfulness that is embedded and already exists within the lifeworld rather than something that is given to an object. His perspective suggests that understanding is embedded in culture and community rather than something that is entirely individually constructed.

The existential nature of the experience of understanding is illustrated in Heidegger's treatise \textit{The Origin of Artwork} (Hoy, 1978) and by Gadamer (1989) in his concept of play. At a time when art was generally considered to be the object of a subject-object relation, Heidegger argues that a work of art is not an object
that is projected by a subject and simply appears or is "indifferently there" (Hoy, 1978, p. 47). Nor is it a tool that provides us with an aesthetic experience. On the contrary "a work of art is precisely that about which we cannot be indifferent" (p. 47). Our experience or understanding of it is something that "claims us because it transcends any context we try to impose on it" (p. 47, my emphasis). In our experience of it we do not reduce it to formal structures and propositional content (Rabinowitz, 1989). Heidegger asserts that this notion of a work of art is historical because it conditions "our very understanding of ourselves, our time and our situation" (Hoy, 1978, p. 47). It is not an objective "moment in history" but something that is the ground for, or force that generates further cultural achievements (Hoy, 1978, p. 47, his emphasis). Gadamer (1989, p. 100) extends this idea to the "mode of being of the work of art itself." He illustrates this argument for ontology through the concept of play. Play is not experienced through perspective, state of mind, or the kind of freedom brought about by subjectivity. Rather it is a mode of being. We lose ourselves in the experience (Gadamer, 1989). We live our understanding as beings in the world.

Heidegger's notion of meaningfulness is evident in his view of phenomenology. Whilst Husserl's phenomenological reduction of the given maintained a strong positivist framework, Heidegger's interpretation of the meaning of phenomenology, (deriving from logos) was that of a speaking function: "to let something appear" (Palmer, 1969, p. 128). According to Heidegger, —ology has an as function in that it points to phenomena: "it lets something be seen as something" (p. 128). But in order to see the phenomenon as it is manifest, we must be open to its appearance. Thus the word phenomenology now comes to mean seeing things appear as they are without forcing externally derived categories upon them. Heidegger's emphasis of the speaking function in understanding is taken up again later in the chapter. Here, I make the point that, not only does Heidegger emphasise the ontological nature of a phenomenon as it manifests itself to us, but his experience of understanding shows a shift in focus. He appears to reverse the relation between the interpreting person and the phenomenon. For example, Schleiermacher's framing of the hermeneutic circle was in direct reference to understanding the text. So the direction of relation appears to have been from the interpreter towards the text. Dilthey's theory of understanding is experiential. Understanding always occurs within a context of relations or the hermeneutic circle. However, for Dilthey the circle itself continues to be a methodological device rather than an experiential moment.
In contrast, Heidegger and Gadamer are concerned with the nature of understanding itself and the hermeneutic circle is the condition by which understanding is achieved (Hoy, 1978). For instance, Heidegger sees the circular structure of understanding in terms of existence: a dialectical relation (Howard, 1982) or "ontological structural element in understanding" (Gadamer, 1989, p. 293). Thus, in line with being-as-experience, understanding is the hermeneutic circle. Heidegger incorporates the interpreter and Dilthey's notion of understanding as an temporal/historical entity into a single act. "It is neither subjective nor objective but describes understanding as the interplay of the movement of tradition and the movement of the interpreter" (Gadamer, 1989, p. 293, my emphasis): a mutual merging of what is understood and the accompanying act of understanding. This view differs from Dilthey's sense of homogeneity between the knower and the known, and Husserl's correlative subject and object, where for both, subject and object continued to be recognisably separate entities that were subjected to a form of psychological method. Gadamer's example of play illustrates that understanding is not just one of various possible modes of behaviour but the mode of being itself and he uses the word hermeneutic in this sense (Gadamer, 1989). A knowing activity does not derive from similarity of mode of being between two elements. Rather it is an ontological focus on the particular nature of the mode that is common to both. Thus the knowing relation is also temporal in the sense that it is mutually influenced or mediated by the experiences of both knower and what is to be known. So the notion of subject and object ceases to exist and understanding as a circular structure of relations now assumes the character of a relational whole and becomes existential (Palmer, 1969, p. 131).

**Understanding as a Transformational Experience**

This existential characterisation of understanding introduces a new dimension that moves it beyond the formal, circular structure of the part/whole iteration that was associated with previous views (Gadamer, 1989). Unlike Husserl's notion of essence that implies a concrete, static view of experience, Heidegger's focus on existence suggests a dynamic and changing view of understanding (Hoy, 1978). His characterisation of lifeworld and its "power to grasp one's own possibilities" (Palmer, 1969, p. 131) was mentioned above. The notion of possibility suggests change or transformation. In contrast to Husserl's presuppositionless, subjective stance (Hoy, 1978), Heidegger and Gadamer, assume that existence is the
projection of a person's lifeworld (Howard, 1982, p. 125): a world that is already structured. Therefore, "any interpretation which is to contribute to understanding, must already have understood what is to be interpreted" (Heidegger, in Hoy, 1978, p. 2). The way in which this idea is framed provides us with another form of the Meno's paradox. Whilst, Schleiermacher explained the paradox away in terms of intuition and divination, Heidegger associates it with epistemological issues and deals with it differently. He argues that in understanding we move in a circle in which what we understand is already presupposed in terms of our prior understanding. It is our lifeworld that provides the fore-structure that anticipates meaning in understanding (Howard, 1982, p. 125). This assertion implies that understanding is an unchanging circular process. However, Heidegger writes:

It is not to be reduced to the level of vicious circle, or even of a circle which is merely tolerated. In the circle is hidden a positive possibility of the most primordial kind of knowing, and we genuinely grasp this possibility only when we have understood that our first, last, and constant task in interpreting is never to allow our fore-having, fore-sight, and fore-conception to be presented to us by fancies and popular conceptions, but rather to make the scientific theme secure by working out these fore-structures in terms of the things themselves" (Heidegger, in Gadamer, 1989, p. 266).

Heidegger (in Hoy, 1978, p. 3) argues that to understand the circle in terms of "vicious" presupposes an objective view of knowledge. It also suggests an inherent dualism. Yet Heidegger's and Gadamer's existential view that understanding is pre-supposed in experience is non-dualist. Moreover, Heidegger's notion of fore-understanding is more than circular. Not only do fore-structures pre-exist but they are also worked out in terms of the "things themselves" in the kind of dialectical interplay that was mentioned above. The focus on working out fore-understandings is seen also in Gadamer's emphasis on the importance of self-understanding in the act of understanding that was mentioned earlier in the chapter (p. 4).

For Gadamer (1989) fore-understanding is concerned with the continuous projection of meanings that are constantly revised in terms of what "emerges" as the interpreter "penetrates into the meaning" (Gadamer, 1989, p. 267). Gadamer (1989) asserts that the interpreter brings to the "interplay" or relation a sense of tradition. Yet, "tradition is not simply a precondition; rather, we produce it ourselves inasmuch as we understand, participate in the evolution of tradition, and
hence further determine it ourselves" (Gadamer, 1989, p. 293). In his concept of fore-conception Gadamer (1989) argues that understanding between present tradition and the historical phenomenon always constitutes a completeness or unity of meaning and as an act it is approached with that expectation. The act of projection comprises the projection of meaning to the whole phenomenon as the part becomes manifest (Gadamer, 1989). However, the act of projection and its accompanying focus on the phenomenon as it appears assumes a reciprocity of effect: "every revision of the fore-projection is capable of projecting before itself a new projection of meaning ... until it becomes clearer what the unity of meaning is; interpretation begins with fore-conceptions that are replaced by more suitable ones" (Gadamer, 1989, p. 267). We ourselves exist within constantly ongoing and evolving fore-meanings and so understanding is an event in which past and present are constantly mediated (Gadamer, 1989) and understanding itself is constantly changing. Thus understanding is no longer understood in terms of a circle but a spiral of multiple layers of meanings (Hoy, 1978) that are constantly evolving. In the terminology of 2000, understanding is now experienced as transformational. It is experience itself that changes the person who experiences. For example, Gadamer asserts that a "work of art has its true being in the fact that it becomes an experience that changes the person who experiences it." (Gadamer, 1989, p. 102). So existence assumes a new kind of temporal dimension in understanding. Time is no longer understood in terms of distance, nor, in contrast to earlier views of hermeneutics, does it need to be overcome. Rather it is the substance for understanding or "the supportive ground of the course of events in which the present is rooted" (Gadamer, 1989, p. 297).

**Understanding as a Creative Act**

In this kind of understanding is an element of recognising, interpreting, connecting, and concluding (Gadamer, 1989). Through the process of understanding one has not only projected oneself "understandingly toward a meaning—in the effort of understanding—but the accomplished understanding constitutes a state of new intellectual freedom" (Gadamer, 1989, p. 260). The existential characterisation of understanding makes it a creative act: "being open to the as yet unsaid" (Palmer, 1969, p. 147) in the text. Thus hermeneutics is not a simple return to the past or an exploration of the past in relation to the present but "a new event of disclosure" because "to refuse to go beyond the explicitness of the
text is really a form of idolatry, as well as historical naivete" (Palmer, 1969, p. 148).

Gadamer (1989) argues that the notion that an interpreter may understand something better than the original author represents "the whole problem of hermeneutics" (p. 192). Previously, this concept had been used to support rationalist objective critique (Gadamer, 1989). Its focus was on the knowledge itself, and the meaning of this concept was associated with the use of thought to acquire a greater clarity than the author was able to achieve. In contrast, Schleiermacher understood this idea more subjectively in terms of identification with the writer. For him, and his contemporaries it meant that a text was an expression that could be understood in the context in which it was created, a context that included an understanding of the rules of the particular discourse that had been adopted. The author of the work was assumed to have been unconscious of that context and the rules of the genre. Nevertheless, the authority of the text was not in dispute. However, for Gadamer understanding occurs through an interrogation to discover what the author did not say (Palmer, 1969, p. 147). Similarly, Rabinowitz (1989) draws attention to Iser's emphasis on the relation between what is explicit and the implicit in a text. Iser (in Rabinowitz, 1989) argues that communication begins when the interpreter is able to bridge the gaps in the text. Such gaps act as a "pivot on which the whole text-reader relationship revolves" (p. 89). Moreover, such interrogation is not the end of the process but the starting point "as something to be explained—and perhaps something to be altered as well" (Rabinowitz, 1989, p. 90).

Understanding as a Linguistic Phenomenon

According to Hoy (1978) Gadamer's greatest contribution to hermeneutics was his emphasis on understanding as a linguistic phenomenon. Heidegger introduced the hermeneutic role of language in his assertion that understanding comes into being, and is being through language (Palmer, 1969). Gadamer (1989) argues that hermeneutics assumes an ontological basis in language. He extends the concept of mode or experience of being, that was illustrated earlier in the concept of play, to the idea of involvement in conversation. His elaboration, through the notion of application, is described in the following section.

Reference was made above, to the way in which eighteenth century hermeneutic tradition separated understanding and interpretation. In earlier times
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the process of understanding was seen to comprise three parts or "moments" (Hoy, 1978, p. 53). They are: subtilitas intelligendi (understanding), subtilitas explicandi (interpretation or explication), and subtilitas applicandi (application). The Latin word subtilis derives from sub, under and tela or web. The English word subtle meaning fine, delicate, calling for fine discrimination (Macdonald, 1972) comes close to what is intended. For Gadamer (1989, p. 307) subtilitas is not a method "that we have at our disposal" but rather "talents requiring particular finesse of mind." So understanding, interpretation and application may be considered as refined capacities or skills.

The importance of the "inner unity" (Gadamer, 1989, p. 307) of understanding and interpretation has already been emphasised. It became evident in Schleiermacher's elaboration of the hermeneutic circle. Gadamer (1989, p. 307) argues repeatedly (Hoy, 1978) that "understanding is always interpretation" and so "interpretation is the explicit form of understanding" (Gadamer, 1989, p. 307, my emphasis). However, this "fusion" of understanding and interpretation in earlier experiences of hermeneutics obscured the role of application (Hoy, 1978, p. 53). Yet Gadamer (1989, p. 308) argues that these three aspects of the hermeneutic act are "one unified process," in which each is integrally related to the other. The understanding and interpretation are always applied related to the interpreter's own present situation (Gadamer, 1989). Here Gadamer is drawing on Heidegger's notion of the fore-structure of understanding. For him, understanding (that includes interpretation and application) is "grounded in and constituted by a concrete, temporo-historical situation" (Hoy, 1978, p. 54). Thus Gadamer (1989, p. 260, his emphasis) argues that "all such understanding is ultimately self-understanding." Yet a distinction must be made between the unthinking application of prior conceptions, and application as a reflective process that involves access to the self-understanding or fore-structures mentioned above.

Gadamer (1989) suggests that the concept of the unity of understanding, interpretation and application uncovers other important aspects of understanding. Most importantly for modern hermeneutics and for this study, Gadamer (1989) sees the hermeneutic act as a form of dialogue in which the interpreter and what is to be interpreted stand in relation to each other. This notion of dialogue implies the use of a common language that becomes part of the inner structure of understanding that make its linguistic aspects apparent. Gadamer focuses on what is communicated within the dialogue rather than language in terms of its form and
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structure. Yet both are coherently related to each other. Furthermore, it is through dialogue that understanding is mediated, a notion that "moves the whole problem of language from its peripheral and incidental position into the center of philosophy" (Gadamer, 1989, p. 307). He poses the idea of being open to experience in order to experience: "Conversation is a process of coming to an understanding. Thus it belongs to every true conversation that each person opens himself [sic] to the other" (Gadamer, 1989, p. 385). He draws on his example of the concept of play, and the need to lose oneself in its experience, to illustrate the centrality of language to understanding: "someone who understands is always already drawn into an event through which meaning asserts itself." (Gadamer, 1989, p. 490).

Historical Experiences of Understanding: A Pattern of Development?

The brief analysis presented above shows how our notion of understanding has developed and changed over time. It shows an evolution of the meaning of understanding that progresses from interpretation as the correct grammatical reproduction of a given text to an explication of the rules of discourse and a renewed application of those rules. We see a transition with Schleiermacher and Dilthey from understanding that is reproductive to that which is experiential and focuses on the construction of meaning. In Heidegger and Gadamer there is further development to a notion of understanding that is existential and transformative.

These shifts in the meaning of understanding are accompanied by similar shifts in the meaning of the hermeneutic circle. Schleiermacher's circle comprises a methodological tool that enabled him to reconstruct what is to be understood in its original context. Dilthey's focus on epistemology draws attention to the tensions of dualism. He introduces the notion of relation between the interpreter and what is to be understood. He emphasises the idea of the unity of meanings and his experience of understanding tends to be more holistic. Heidegger's and Gadamer's notion of understanding is ontological. It is the mode or structure of existence and we live understanding as beings in the world. Unlike previous conceptions where hermeneutics was conceptualised variously as an art or a science, Gadamerian hermeneutics views experiences of understanding in terms of our constitution of the world in which we exist (Crusius 1991) and its description (Hoy, 1978).
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Hermeneutic Experiences and This Study

Gadamer's (1989) analysis suggests that lived experience assumes a unity of meaning that is grounded in culture and community and understanding is coherently related to lived experience. This kind of understanding can be characterised as a developmental spiral of multiple layers of meanings. For me this is a fundamental assumption on which this thesis rests. Gadamer's focus on the constitution of the world in which we live includes our cultural capital and further cultural achievements (Hoy, 1978). Research too generates cultural achievement. In line with Heidegger, (in Gadamer, 1989) research associated with human phenomena should be something that claims us as lived experiences that transcend any context that we as researchers can impose on them. Using Gadamer's (1989) analogy, art is not an object to be looked at but something to be understood. Likewise, learning is not an object to be observed impartially. For the learner it is a way of thinking and being and for us who are interested in it as a phenomenon it must be understood in those terms.

There were other consequences for this view of research. For example, in my interaction with the participants in this study the idea of unity of experience assumes even more significance. It allows experience to be "taken out of the continuity of life" and explored "but at the same time related to the whole of one's life" (Gadamer, 1989, p. 69). So that experience and life assume an organic relation between part and whole. It is this meaning of experience and the iteration of part, and whole and part that forms the basis for the way in which the meanings that comprise this story are generated. The participants' experiences are, in one sense, taken out of the continuity of the lives in which they were constituted yet they also comprise our experiences of those lives. My current task is to make visible the whole in each of the parts, that part-whole-part movement that is the actual practice of hermeneutics—"a constant back and forth or dialectical process" (Howard, 1982, p. 10). The generation of this kind of circularity or increasing spiral of multiple meanings is not only a fundamental principle for the development of hermeneutic understanding but I also believe its achievement is the aim of good research.

The idea of multiple layers of meanings is also apparent in the process of the study. Inevitably, the first is concerned with the participants' understandings of their lived experiences of learning. The second comprises my interpretation or constitution of those experiences. Howard (1982) writes: "of course, the
Chapter 1: An Introduction to the Development of Students' Experiences of Learning

An interpreter can only begin with a part, but even there it is the whole he [sic] is looking for, the whole with which the author started and which now lies concealed in the parts" (p. 10). Thus, the third layer of meanings is formed from the story or whole that I construed from those experiences. And now, just as I was the interpreter of my interaction with the participants in the research, you as the reader become the interpreter of these events—a fourth and further circle of meanings. From a hermeneutic perspective, this act of interpretation means that my understanding of my dialogue with the participants differs from their understanding (Gadamer, 1989). Similarly, your act of understanding/interpretation will inevitably adopt the critical attitude that transforms what I have written into some new form of knowledge. In terms of understanding, this constitutes an example of the hermeneutic principle of being able to take a stance to the future in light of the past (Gadamer, 1989). Interestingly, this idea of stance will be seen to be a critical requirement for the achievement of transformative experiences of learning.

An Outline of the Thesis

The characteristics inherent in the foregoing discussion suggest that, rather than force its description into the kind of surface (Schleiermacher, in Howard, 1982) linearity that is associated with a more traditional descriptive framework, I should try to capture the inner dynamic or lived experience of the participants' experiences of learning. Accordingly, I used the dialectical and iterative movement of the hermeneutic circle (Hoy, 1978) in the actual work of the research and also in the writing of the thesis. What this involves is a dynamic interplay of the assumptions that framed my original project, my developing philosophical framework, literature on student learning, and the method adopted. Such interplay includes the effects of different stages of the study on the development of my understanding. For instance, I revisited the hermeneutic literature through the lens of the results of the study.

The thesis is organised along the following lines. This chapter records the fore-structure of my understanding yet it also reflects the outcome of the research. For instance, I have tried to build a "context of meaning" (Palmer, 1969, p. 18) or frame that captures what went before and provide an outline of what is to come. Chapter 2 is concerned with literature on epistemic beliefs and their development (e.g., Perry, 1970). Chapter 3 focuses on research that adopts an experiential approach to learning (e.g., Marton & Booth, 1997). It also extends the
philosophical framework that is outlined here as a basis for the research reported in subsequent chapters. Both Chapters 2 and 3 are written from a Gadamerian perspective. In them, I emphasise the importance of ontology for understanding both the phenomena of learning and understanding and research into those phenomena. To some extent I revisit research that has already received substantive attention. This too constitutes a hermeneutic exercise in that it reveals the research on student learning that is relevant to my case but it also shows why, in an historical sense, the research produced the results that it did. The traces of later developments are evident in earlier studies. For example, not only can the roots of contemporary thinking be found in the past but the thinking inherent in different contemporary perspectives can be juxtaposed to paint a relational picture of knowledge in the present. These ideas are not presented as historical causality but as a view that embraces both the existential possibilities of intentional human intellectual activity and the possibility of spontaneous development of similar lines of thought as the context allows. The chapters also demonstrate how conceptions of learning influence conceptions of research in learning which in turn dictate how learning is conceptualised.

In Chapter 4, I provide a description of the method I adopted and the analytical reasoning that was applied to the data. Over a period of the three years of their undergraduate study, I talked with psychology students about their experiences of learning, understanding and knowledge. Each of Chapters 5, 6, 7 and 8, focus on particular kinds of experiences of learning that were generated from these interviews. The chapters illustrate how these students gain knowledge and understanding, and what comprises these experiences. Finally, in Chapter 9, I provide an analysis and synthesis of the results that are reported in Chapters 5 - 8 and relate them to other research.
CHAPTER 2
DEVELOPMENTAL PERSPECTIVES ON WAYS OF KNOWING

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Overview

This chapter focuses on developmental perspectives of ways of knowing. In the first part, I review research on the development of ways of knowing (e.g., Baxter Magolda, 1992; Belenky, Clinchy, Goldberger, & Tarule, 1986; Kitchener & King, 1981) that evolved from William Perry's (1970) study on the growth of intellectual and ethical development of college students. Perry's study was strongly influenced by Piaget's genetic epistemology. In turn, his work, and particularly his theoretical assumptions about knowledge and knowing and its development, have had, and continue to have, significant effects on the conduct of other research on epistemic beliefs.

Accordingly, in the second half of the chapter, I look at the way in which Piaget's theory of knowledge has been taken up in research on epistemic development. My intention is to argue that, in general, and unlike Piaget's broader focus on the dynamic interactive nature of development and change, this research has tended to adopt a relatively narrow focus on development itself. For example, like other research that assumes cognitive developmental perspectives, many of the theorists who have focused on epistemic beliefs, have tended to account for developmental assumptions by placing an emphasis on its stage like nature, rather than exploring fully the range and nature of variation in thinking and experience. Moreover, they have tended to assume and overemphasise the role of the developmental task to explain movement between stages, and, paradoxically, given the previous focus, they have underplayed the effect of the context-situatedness of human experience on the actual nature of thinking.

In this chapter I explore these influences on research on development, and problematise the notion of stage as inevitable and invariant progression, with a view to making an argument for research that is more able to account for the meaning and complexity of adult ways of thinking and knowing. I suggest that our knowledge of the development of experiences of learning and knowing may be extended by an elaboration of both the structural and the more qualitative aspects of change and a focus on ontological explanation. This argument is outlined in this chapter and taken up and extended in subsequent chapters.
CHAPTER 2
DEVELOPMENTAL PERSPECTIVES ON WAYS OF KNOWING

Put generally, the specific problem of genetic epistemology is that of the growth of knowledge; the passage from the inadequate, relatively poorer kind of knowledge to one richer both in intension and extension (Piaget, 1972, p. 16).

Introduction—A Focus on Beliefs and Experience

In the previous chapter, I drew attention to the historical separation of philosophical and psychological aspects of understanding. This kind of split between interpretation and understanding is reflected in research on learning. For instance, until this century the structure of thought was properly considered to be the goal of philosophy. Its study was clearly distinguished from psychological programs that focused on the processes of thinking, (Bernstein, 1983). In turn, educational research tended to be embedded in and derived from psychological and sociological perspectives.

Starting in the 1920s, Jean Piaget challenged this tradition with his cross disciplinary, genetic epistemology. However, it was not until the late 1960s and early 1970s that a major shift occurred, particularly in research on learning in higher education. At this time there was growing awareness that traditional research methods and theoretical perspectives used to investigate learning were inadequate to answer contemporary questions (Entwistle, 1974; Ramsden, 1981; Svensson, 1976). Researchers in higher education started to use more expansive and eclectic approaches that cut across the traditional disciplinary boundaries (Ramsden, 1981) of philosophy, psychology and sociology to provide new ways of understanding how students learn. There was increasing interest in qualitative methods and a change of focus from interest in memory and recall to how students learn and/or exploration of learning in the academic environment. Research contributions began to be viewed in terms of complementarities (Marton & Svensson, 1979; Schmeck, 1988; Säljö, 1982) rather than opposing paradigms. These changes in method and research interest signalled a fundamental shift in philosophy (Entwistle, 1974; 1984) that encompasses both the meaning of educational research and the way in which knowledge and learning are constituted. In the United States this is seen for example, in the programs of Becker, Geer and Hughes, (1968), and Perry, (1970). In Europe a similar shift is
evident in the work of Marton & Säljö (1976a & b), Miller & Parlett (1974), and Ramsden (1979).

Since the 1970s research on experiences, conceptions or beliefs of learning, understanding and knowledge have provided an increasingly important source of knowledge for teachers and researchers (e.g., Marton & Booth, 1997; Ramsden, 1992). Indeed Pajares (1992, p. 329) argues that beliefs may be "as Fenstermacher (1979) predicted, the single most important construct in educational research." Such experiences have been described in terms of epistemic beliefs (Dewey, 1933; Kitchener & King, 1981), conceptions of learning (Marton, Dall'Alba & Beaty, 1993; Säljö, 1979), experiences of learning (Marton & Booth, 1997) and structures of thought (Piaget, 1950). This thesis is concerned with changes in and the development of these experiences. Two strands of research relate centrally to this topic. They evolved separately from different fields of knowledge and in different ways. One derives directly from cognitive developmental psychology and is associated with the development of beliefs about knowledge and knowing. It is the focus of this Chapter. The other strand has tended to emphasise students' experiences of learning rather than their development. It is the focus of Chapter 3.

In this study, I have not adopted Piaget's (1972) genetic epistemology but its problem is of educational interest for this study and more generally. Like Piaget, I believe that the specific task for students in higher education is this passage or journey from the acquisition of relatively poorer kinds of knowledge to those that are richer and more satisfying. The research described in this chapter derives from Perry's (1970) study of the intellectual and ethical growth of college students (Hofer & Pintrich, 1997). In general it focuses upon individuals' beliefs about how knowledge is acquired, how it is organised, the degree to which it is true and how such truth is justified (Schommer, 1994). Grounded in cognitive developmental psychology, it is now known variously as epistemic cognition (Kitchener, 1983); epistemic beliefs (Schommer, 1990), epistemological theories (Hofer & Pintrich, 1997), epistemological reflection, epistemic assumptions (Baxter Magolda, 1992), ways of knowing or epistemological perspectives (Baxter Magolda, 1992; Belenky, Clinchy, Goldberger, & Tarule, 1986). This kind of variation reflects an ill-structured domain (Schommer, 1994) in which the conceptualisation of its core concept appears to differ from study to study (Hofer and Pintrich, 1997).
Chapter 2: Developmental Perspectives on Ways of Knowing

Various attempts have been made to make sense of the area (Hofer & Pintrich, 1997; Kitchener, 1983; Schommer, 1994). Hofer and Pintrich (1997) suggest its roots lie with genetic epistemology and many of the underlying assumptions appear to reflect Piaget's influence. Post Piaget, other developmental studies like those of Gilligan (1982), Kegan (1982), Kohlberg (1969) and Perry (1970) were an attempt to reverse the research trends of the time and "bring knowing back into the picture" (Hofer & Pintrich, 1997, p. 88). Within this area, Hofer and Pintrich identify three lines of research that evolved simultaneously and tend to intersect. I explore two of the three in the following sections. They are concerned with the development of beliefs about knowledge and knowing. The first line of research focuses on how participants make meaning of their educational experiences (Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970). The second line of research is concerned with how epistemological beliefs affect thinking and reasoning processes (Kitchener and King, 1981; Kitchener, King, Wood, & Davison, 1989; Kuhn, 1991). I explore the third line of research (e.g., Schommer, 1990) in a later part of the chapter in discussion of alternative views of development.

Two Complementary Strands of Research on Epistemic Beliefs

Despite Schommer's (1994) and Hofer and Pintrich's (1997) criticisms of the domain, these two lines of research have made a significant contribution to our knowledge of the development of 'ways of knowing' from late adolescence to adulthood. In addition, the studies provide a template for thinking about the ways in which experiences of learning may be explored over time. Moreover, an analysis of this field of research suggests that the development of ways of knowing may be explored as dimensional characteristics. For example, the studies show change along several continua in the development of:

- views of knowledge—from dualism through relativism to evaluative notions of knowledge that allow the individual to discriminate and select.
- knowing—from knowing as observing and receiving to that which is based on inquiry and the personal construction of meaning.
- the person as an individual who is framed passively by the environment to one who evolves and shapes themselves.
Together, these factors make it useful to explore these studies at a detailed level. In the following sections I examine and compare them as a basis for further discussion of the development of knowledge and knowing.

**Making Meaning of Experiences**

The first line of research comprises three substantial, qualitative, longitudinal studies that look at how participants make meaning of their experiences over time. Each study builds on and resembles the other in terms of its general outcome—the production of a hierarchically related set of positions, categories or *ways of knowing* that appear to have a number of aspects in common. Much of the substance of the ways of knowing that are explored below are consistent with the results reported in this thesis.

**Main Outcomes**

Chronologically, the first study is Perry's (1970) research on the growth of intellectual and ethical development of students at Harvard and Radcliffe during the 1950s and early 1960s. Perry's developmental scheme comprises nine positions: *forms* or structures of intellectual thought and behaviour "in which students construe their experience" (Perry, 1970, p. 1) as they progress through their college years. Of particular interest to Perry were the ways "in which they construe the nature and origins of knowledge, of value, and of responsibility" (p. 1). Perry and others (see Hofer and Pintrich, 1997) have typically reduced his initial nine positions into four sequentially ordered overlapping clusters of experiences: dualism, multiplicity, relativism and commitment to relativism. Despite Perry's inclusion of a small number of women in his sample, only male students' data were used to illustrate and validate his results (Belenky et al., 1986).

Thus the second study evolved as a response to Perry (1970) and a more general concern about the absence of women's voices as either researchers or "researched" in developmental psychology. Using Perry as a base, it focuses exclusively on "the ways in which women construe their experience of themselves as developing beings" (Belenky et al., 1986, p. 16). Belenky et al., grouped women's ways of knowing into five epistemological categories: silence; received knowledge; subjective knowledge; procedural knowledge; and
constructed knowledge. At a general level, the last four categories equate to Perry's four clusters or positions (Hofer & Pintrich, 1997).

In the third study, Baxter Magolda (1992) extended Perry's and Belenky et al's work by further exploration of college students' experiences of knowing and reasoning. Baxter Magolda focused particularly on gender differences. She categorised students' developmental pathways through four main ways of knowing from the *absolute*, to *transitional*, to *independent* to *contextual*. In addition, she observed gender-related reasoning patterns that elaborate and illuminate different aspects of the two earlier studies.

A Comparison of Samples and Methods

All three studies used interviews as a primary source of data. Perry (1970) and Baxter Magolda (1992) interviewed students each year during their four or five years of study in college. However, Belenky et al's (1986) research was not intended, initially, to be longitudinal and only about 30% of their sample was interviewed more than once. Perry and Baxter Magolda focused on students' experiences in college, though Perry's sample selected from Harvard freshmen comprised a more elite and homogeneous group than those of Baxter Magolda. Belenky et al's more diverse sample reflects their wider focus—the exploration of women's experiences of learning and knowing in the more general context of their lives. For example, two thirds of their sample were selected from six very different academic institutions, whilst the remainder were drawn from "invisible colleges" like family and social agencies (Belenky et al., 1986, p. 12). The main characteristics of the three studies are summarised in Table 2.1.

All three studies used a relatively open-ended interview approach. Each emphasised the need to obtain data from the participants' point of view. Each started similarly with a general question, that reflected their particular focus. For example: "why don't you start with whatever stands out for you about the year?" (Perry, 1970, p. 7; 19); "what stands out for you in your life over the past few years?" (Belenky et al., 1986, p. 231); "tell me about the most significant aspect of your learning experience in the past year" (Baxter Magolda, 1992, p. 412). Perry, whose interview schedule was the least structured, followed up with probes of the students' initial responses. In contrast, subsequent questions in the other two studies reflected specific developmental frameworks. For example, Belenky et al. included questions on intellectual and ethical development (Perry, 1970),
Table 2.1: Summary of Sample Characteristics For The Three Studies

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>140</td>
<td>135</td>
<td>101</td>
</tr>
<tr>
<td>Complete sets</td>
<td>84 complete 4 year reports (only 2 women)</td>
<td>30% interviewed more than once.¹</td>
<td>70 complete 4-5 year sets.</td>
</tr>
<tr>
<td>Sex</td>
<td>112 males 28 females</td>
<td>Female</td>
<td>Females and males equally represented.</td>
</tr>
<tr>
<td>Characteristics</td>
<td>Freshmen: white, late adolescent, middle class from Harvard and Radcliffe</td>
<td>Diverse range of ages, races, educational and social backgrounds.</td>
<td>Freshmen: white, late adolescent, middle class from a Mid-Western University.</td>
</tr>
</tbody>
</table>

self-description and moral development (Gilligan, 1982), moral judgement (Kohlberg, 1984), information about being a woman, relationships, and education. Baxter Magolda focused on six domains of epistemological development that derive from the work of Perry (1970), and Kurfiss (1977). The domains included the roles of learner, teacher, peers, assessment, and the nature of knowledge and decision making. In addition, students in her sample completed the Measure of Epistemological Reflection or MER (Baxter Magolda & Porterfield, 1985) after each interview. The questionnaire refers to the same six domains of epistemological development mentioned above and seeks students' elaborations of and reasons for their preferences. Its coding manual reflects epistemological levels that were developed from both Perry and Belenky et al.

**Variation in Analyses**

All three studies entailed labour intensive, detailed analysis. Perry (1970, p. 8) produced his developmental scheme through the use of two sequential processes which he described in terms of "first-person" and "from the outside." First, using a phenomenological analysis of the four year reports, he described the progress of an imaginary "modal" or "normative" student who represented the entire continuum of development he observed amongst the sample. Second, through detailed examination of each student's report, he abstracted the nine positions of the scheme and their structure, and the transitional steps. The positions represented "stable" forms that were determined by the "quality of the coherence" (p. 46) in the data. Transitional steps were identified as "...(the more conflicted

¹ Second and/or third interviews occurred variously either before or after the main study.
and unstable forms) which articulate the development from stage to stage, transforming one structure to the next" (p. 9). The sequence of the positions reflected the internal logic that existed in the data. Judges were used extensively to check the validity of the scheme.

Belenky et al's (1986) analysis involved a focus on the meaning and experiences that existed within each woman's life story. They conducted a contextual analysis that involved reading and re-reading each individual transcript and resulted in the development of coding categories. For example:

When we found an idea ... that suggested gaining a voice, we would underline the text in the interview. We then copied verbatim the most salient quotes and grouped them by epistemological position. ... We moved back and forth between these excerpts and the unabridged interviews. This enabled us to maintain a dual perspective, hearing the statements as exemplars of a particular epistemological position but hearing them also in the context of the woman's whole story (p. 16).

Subsequently, further analysis was conducted on the data collected within each coding category.

Like Perry (1970), Baxter Magolda (1992) adopted a two pronged approach. First, and resembling Glaser and Strauss's (1967) grounded theory, she identified primary units of datum that could "stand alone" (Baxter Magolda, 1998, p. 354). Similar units were compared and contrasted in order to group and refine categories or ways of knowing. Subsequently, adopting a theoretical framework that was established a priori, she used the MER (Baxter Magolda & Porterfield, 1985) manual to interpret the epistemological levels that were generated in her interview data. For each transcript and within each epistemological domain e.g., role of student or instructor, she identified the primary reasoning structure and rated it by comparing it with those in the MER manual for that domain. She states:

When a match was found, the corresponding epistemological level and reasoning structure were recorded. If a match was not found, I made a judgement whether the response reflected one of the epistemological levels

---

2 This decision was based on the fact that the MER, developed from interviews with 1000 college students, includes a manual that is designed to evolve as it is used to analyse more data.
and, if so, noted the new reasoning structure. Once an epistemological level was assigned for each domain ... the domain ratings were averaged to arrive at a final epistemological rating (Baxter Magolda, 1992, p. 407).

The epistemological ratings provided her with a tool to compare the reasoning structures of male and female students.

**Ways of Knowing**

In general, and excepting Belenky et al's (1986) first category, the epistemological perspectives described in these studies resemble each other (Baxter Magolda, 1992; Belenky et al., 1986; Hofer & Pintrich, 1997). They relate also to the results reported in Chapters 5-8 of this thesis, so they are summarised in Table 2.2 and discussed in the following sections.

**Silence**

Belenky et al's (1986) first category, *silence*, is experienced as an absence of voice, a denial of self, and a dependence on external authority for direction. It is a passive gendered way of knowing that is accompanied by feelings of disconnection and powerlessness. The absence of this experience in the other two studies is explained by differences in knowledge interest and the consequential differences in sampling (Table 2.1). Reports of silence as a way of knowing derived predominantly from women who grew up in conditions of neglect, abuse or social disadvantage.

**Correct and Absolute Knowing**

In general the first group of common experiences is seen in Perry's (1970) dualism, Belenky et al's (1986) *received knowledge*, and Baxter Magolda's (1992) *absolute knowing*. In this experience knowledge is certain and there are absolute answers (Baxter Magolda, 1992). Uncertainty exists only because there is no access to the absolute answer. Knowledge rests with and is passed on by authority and interpreted in terms of the absolute. Learning involves acquiring and remembering information (Baxter Magolda, 1992) and is only committed to memory by hard work (Perry, 1970). Assessment involves correct reproduction of what was given (Baxter Magolda, 1992).
### Table 2.2: A Comparison of Three Studies

#### Intellectual and Ethical Development
(Source: Perry, 1970, p. 9 & 259)

<table>
<thead>
<tr>
<th>Dualism (1-2)</th>
<th>Authoritative knowledge is truth. Unquestioned polar view of the world: authority/right/we. Knowledge is quantitative.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplicity (3-4)</td>
<td>Modified dualism. Relativism is a special case of dualism. Authority is defrocked. Knowledge is plural, unstructured, and uncertain if the authorised version is unknown. Contextual relativistic (but lacking implications) reasoning is the authorised version so duality restructured to adjust.</td>
</tr>
<tr>
<td>Relativism (5-6)</td>
<td>Knowledge is relative and contextual so commitment is a logical necessity. The self makes meaning. Knowledge is contingent and dualism subordinated to specific instances.</td>
</tr>
<tr>
<td>Commitment within relativism (7-9)</td>
<td>Involves self-definition. Focus on commitment, and responsibility, recognised in terms of identity and personal development. What is known changes according to context but is also subject to argument and evidence.</td>
</tr>
</tbody>
</table>

#### Women’s Ways of Knowing
(Source: Belenky et al., 1986, p. 15)

<table>
<thead>
<tr>
<th>Silence</th>
<th>Knowing is mindless, and voiceless and subject to the whims of external authority.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received knowledge</td>
<td>Listening to others, receiving, or producing knowledge from external authority/right/they so knowledge is dualistic.</td>
</tr>
<tr>
<td>Subjective knowledge</td>
<td>Listening to the inner voice-truth and knowledge are personal, private and subjectively known or intuited.</td>
</tr>
<tr>
<td>Procedural knowledge</td>
<td>The voice of reason. Knowing is objective, applying systematic, analytic procedures for obtaining and communicating knowledge. Two forms: a) separate knowing: what techniques can I use to analyse this? b) connected knowing: what does this say to me?</td>
</tr>
<tr>
<td>Constructed knowledge</td>
<td>Integrating the voices. All knowledge is constructed and what is constructed depends on the context. The knower is an intimate part of the known. Being open and empathetic; having the ability to imagine and be sensitive to the interior life of others.</td>
</tr>
</tbody>
</table>

#### Epistemological Reflection
(Source: Baxter Magolda, 1992, p. 36-72)

<table>
<thead>
<tr>
<th>Absolute knowing</th>
<th>Knowledge derives from authority and is certain or absolute. Learning is acquiring and remembering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitional knowing</td>
<td>To make sense of knowledge which is certain in some areas and uncertain in others. Learning is more complex when knowledge is uncertain. Focus on its use.</td>
</tr>
<tr>
<td>Independent knowing</td>
<td>Knowledge is uncertain and comes from different sources including oneself. Everyone has their own beliefs. Thinking is independent, can create one's own perspectives.</td>
</tr>
<tr>
<td>Contextual knowing</td>
<td>We construct our own perspectives by evaluating evidence and expertise in context. Knowledge evolves.</td>
</tr>
</tbody>
</table>

---

36
More specifically, Belenky et al's (1986) received knowledge is knowing as listening to authority. For the women in their study, words are perceived to be central to the process of learning and knowing. Moreover, "unless you're taking something in it's not worth it" (p. 37, their emphasis). The nature of what is heard or taken in resembles that of the other two studies. In all three studies experiences of knowing are characterised in terms of a basic dualism in which the individual sees that world in concrete terms: polarities of right/wrong or good/bad. According to Belenky et al., (1986) received knowledge differs from Perry's (1970) basic dualism in an important detail. Perry's few male students who contributed to this category, believed that authoritative knowledge is truth, but they saw it in terms of the phrase: "Authority/right/we" as opposed to "illegitimate-wrong-others" (p. 59, my emphasis). That is, students understood that they were included within the authoritative context and their role was to comply with the demands of that context. In contrast, Belenky et al's women perceived themselves to be alienated from the authoritative context and understood received knowledge in terms of "authority/right/they" (p. 44, my emphasis). The focus on the latter, like their view of knowing as silence, is an example of Belenky et al's metaphorical lack of voice.

Transitional Knowing: the Bridge to Relativism?

Perry's (1970) multiplicity, Belenky et al's (1986) subjective knowledge and Baxter Magolda's (1992) transitional knowing make up the second group of common experiences. Students who adopt this way of knowing continue to assume that absolute knowledge exists but they also experience its diversity and uncertainty. Belenky et al's subjective knowledge shows a change from the passivity of earlier perspectives to more personal action. Baxter Magolda's transitional knowing involves making sense of material, yet if knowledge is to be known, the individual must perceive it to be useful. For example:

In physics, there were a lot of formulas we had to know. I did go in and ask him how one worked. And I tried to understand why it worked. And on a test, there was a two-part problem where you had to work around the formula to get another formula for the second part of the problem. And I think it helped there. Because if I just had memorized the original formula and not really understood why it worked, I could have never thought how to manipulate it to use it the way he wanted us to (Tony in Baxter Magolda, 1992, p. 126).
Chapter 2: A Developmental View of Ways of Knowing

So teachers are required to use methods that focus on understanding and application. In the passage above another feature of transitional knowing can be observed. Tony's notion of understanding is why it worked. This focus on why or 'technical' knowing appears to play an important role in the further development of experiences of learning.

Perspective differences appear because some answers are unknown. Knowledge that is uncertain is also perceived to be more complex. The fact that there are multiple versions of "the truth," means that all views are equally valid and anything goes (e.g., Perry, 1970, p. 99). Likewise, women speak of multiple personal truths and the equality or validity of opinions. Knowledge derives from oneself or is intuited yet it remains dualistic in that truth is private and personal (Belenky et al., 1986). Women now experience an inner voice and the right answers reside within the individual. However, Belenky et al. make the point that this shift to multiplicity/subjectivism is not, as Perry (and Piaget, Kohlberg and Erikson) suggests, an essential task of adolescence. They argue that:

Perry implicitly locates the shift into multiplicity/subjectivism as occurring in early adolescence and explicitly links it to the process and impact of a liberal education and exposure to cultural pluralism. According to Perry (1970, 1981), the catalyst for the move is the simple and profound discovery that there is diversity of opinion about what is good and what is right. With multiplicity, truth is no longer conceived as absolute and singular but multiple and infinite (Belenky et al., 1986, p. 62).

Like Perry's (1970) men, some women ("hidden multiplists") whose backgrounds resembled those of Perry's male sample, "were propelled into subjectivism" (Belenky et al., 1986, p. 64) in a similar way. However, other women experienced a more gradual transition that is associated with significant life experiences such as childbirth and divorce. Moreover, almost half of their sample with ages ranging from 16 to 60 years report a subjectivist way of knowing (see Figure 2.1, p. 52). This way of knowing also crosses educational, race and class boundaries. These differences between the two studies are discussed below in terms of context, age and stage-related notions of development.
Relativism or Independent Knowing

The third group of common experiences comprise Perry's (1970) relativism, Belenky et al's (1986) procedural knowledge, and Baxter Magolda's (1992) independent knowing. In Perry's scheme this experience is a watershed (Hofer & Pintrich, 1997) that marks the transition from dualistic thought to more relativistic reasoning. It appears as a similar transitional point in the other two studies.

For example, procedural knowledge is "the voice of reason" (Belenky et al., 1986, p. 87) or objective knowing that is oriented away from the knower towards what is to be known. According to Belenky et al. (p. 93) this kind of reasoned reflection resembles the Piagetian process of accommodation: "truth is not immediately accessible" but requires "conscious, deliberate, systematic analysis." In all three studies, the individual has come to understand that different people construe the world differently and knowing involves developing different ways of looking at something. For example:

The world that procedural knowledge reveals is more complex than the world revealed through received or subjective knowledge. In formulating her answer to an exam question, Clara learned to ask herself how many different ways she could look at it. The notion of 'ways of looking' is central to the procedural knowledge position. It builds upon the subjectivist insight that different people have—and have a right to have—different opinions, but it goes beyond the idea of opinions as a static residue of experience. Women like Clara conceive of knowledge as a process. They believe that each of us looks at the world through a different lens, that each of us construes the world differently. They are interested not just in what people think but in how people go about forming their opinions and feelings and ideas (Belenky et al., 1986, p. 97).

Thus knowledge is contingent upon its context and is perceived to be relative and so according to Perry (1970) commitment is a logical necessity. The individual is the maker of meaning. In this perspective individuals create and express their own views, provide arguments to support them and see them as valid and equal to those of authority.

However, it appears that the movement to relativism has become another problem to be overcome. According to Belenky et al. (1986) the individual's focus is on form rather than content, and knowing how: "I'm learning reason,
learning how to write decently, learning how to speak concisely and to say what I mean" (p. 95). For example: "listening to these women we were reminded of meetings of committees evaluating research proposals, in which the entire discussion centers on the methodology and no attention is paid to the significance of the problem." (p. 95). They suggest that those who adopt procedural knowing become: "encapsulated within systems. They can criticize a system, but only in the system's terms, only according to the system's standards. Women at this position may be liberals or conservatives, but they cannot be radicals" (p. 127).

The Construction of Meaning

The fourth group of experiences comprise Perry's (1970) commitment to relativism, Belenky et al's (1986) constructed knowledge, and Baxter Magolda's (1992) contextual knowing. Perry's commitment to relativism focuses on developing maturity and responsibility whilst those of the other two studies show a change from relativism to more transformational thinking. Knowing is more experiential (Belenky et al., 1986). The perspective assumes that "all knowledge is constructed and the knower is an intimate part of the known" (p. 137). Moreover, in contrast to the previous group of experiences, these experiences allow individuals to move outside the given. Knowing involves change: a "transition into a new way of viewing the self and the world" (p. 136). It involves the integration of subjective and objective thought. Empathy for the other view that was evident in procedural knowing is more pronounced (Belenky et al., 1986). Perry and Belenky et al., report that individuals have disgarded the either/or polarities of dualism and have a high tolerance for contradiction. Independent thinking continues to be emphasised. The uncertainty of knowledge remains but notions of validity and equality of different views that were evident in earlier experiences have been replaced by the belief that some knowledge claims are better than others, that validity is dependent on context, and claims must be supported by evidence (Baxter Magolda, 1992).

Gender-Related Ways of Knowing: Patterns of Reasoning

Baxter Magolda (1992) claims that certain aspects of ways of knowing are gender-related and that such differences are socially constructed. For instance, in addition to the four qualitatively different ways of knowing described above, she also identified two parallel, gender-related, thematic reasoning patterns or ways in which students justified their thinking. The patterns appear as continua or
dimensions that recur and coincide or "cut across" (p. 367) the first three ways of knowing respectively. Both reasoning patterns have fluid boundaries and are equally complex. The **objective reasoning pattern** is characterised as objective and impersonal (Baxter Magolda, 1992) whereas the **relational reasoning pattern** is more connected and inter-personal (Severiens & Ten Dam, 1998). The objective reasoning pattern is more frequently (but not exclusively) related to male students and the relational reasoning to female students (Baxter Magolda, 1992). The differences were recorded only when they were evident of such reasoning in 33% or more of the sample. Baxter Magolda's claim of gender-related patterns is supported by a comparison with Perry's and Belenky et al's studies. These differences are summarised and compared with Perry's (1970) and Belenky et al's (1986) results in Table 2.3.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Absolute knowing: mastering</td>
<td>Position 2: Multiplicity (pre-legitimate) - authority/right/we</td>
<td>Received knowledge-authority/right/they</td>
</tr>
<tr>
<td>Transitional knowing: impersonal</td>
<td>Position 3: Multiplicity (subordinate)</td>
<td></td>
</tr>
<tr>
<td>Independent knowing: individual</td>
<td>Position 4: Multiplicity (correlate)</td>
<td>Procedural knowledge: separate knowing</td>
</tr>
</tbody>
</table>

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<tr>
<th>Baxter Magolda (1992): relational reasoning pattern</th>
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<tbody>
<tr>
<td>Absolute knowing: receiving</td>
</tr>
<tr>
<td>Transitional knowing: interpersonal</td>
</tr>
<tr>
<td>Independent knowing: inter-individual</td>
</tr>
</tbody>
</table>

Baxter Magolda's two patterns of reasoning are shown in the left hand column of Table 2.3. She suggests that the reasoning patterns in her objective continuum: *mastering, impersonal* and *individual*; match those found in Perry's (1970) positions 2, 3 and 4 (see the Table 2.3, middle column) respectively (Baxter Magolda, 1992). For example, in her absolute knowing and Perry's position 2, students attempt to master the material to be learned. In her

---

3 Baxter Magolda (1986) notes that there were insufficient data to analyse for gender differences in the category of contextual knowing.
transitional knowing and Perry's position 3, impersonal reasoning involves thinking, and challenge, whereas her independent knowing and Perry's position 3, are associated with the right to personal opinion. Baxter Magolda characterises her relational continuum in terms of receiving, interpersonal and inter-individual reasoning patterns. These match aspects of women's ways of knowing in Belenky et al's (1986) received, subjective and procedural knowledge (see right hand column of Table 2.3). In addition, the difference between mastering and receiving in Baxter Magolda's absolute knowing appears to resemble Belenky et al's distinction between "authority/right/we" and "authority/right/they" (see Chapter 2, p. 37) at the same level.

Furthermore, Belenky et al's (1986) procedural knowing comprises two distinct epistemological orientations: separate and connected knowing (see italics, right hand column of Table 2.3). Separate knowing is characterised by critical thinking and knowers tend to ask questions like: "what techniques can I use to analyse...?" (p. 101). It involves developing the requisite skills and capacities that comply with traditional academic standards. This way of knowing resembles that of Perry's (1970) men and Baxter Magolda's (1992) individual knowing. Women who espouse separate knowing share characteristics in common with Perry's men, in that they tend to be white, middle class; young (ages ranged from late adolescence to mid-twenties) and enrolled in or have graduated from the more traditional, elite educational institutions. In contrast, connected knowing is more strongly related to subjectivity. Knowledge derives from personal experience but it is experience that is built upon being open and having empathy for the other view. This orientation is more likely to produce questions like: "what is this poet saying to me?" (Belenky et al., 1986, p. 101). It resembles Baxter Magolda's (1992) inter-individual reasoning pattern and does not appear to be evident in Perry's (1970) study.

Despite these distinctions Baxter Magolda (1992) observed that there were more similarities than differences between men's and women's ways of knowing. She is supported by Belenky et al. (1986) who assert that ways of knowing resembling those that they describe can be found amongst men. Thus, Baxter Magolda (1992) argues that gender does not account for differences in reasoning patterns but that the use of particular reasoning patterns tends to be gender-related. She also observes that such patterns are "equal" in their ways of knowing in that "different reasoning patterns led to equally complex ways of viewing the
world" (p. 13). Moreover, the way in which Belenky et al. related their within sample differences to women's socialisation provides support for Baxter Magolda's assertion that such differences are socially constructed.

The Development of Reflective Judgement

The second line of research on epistemic beliefs is described more briefly. Its interest for this thesis is the way in which it extends aspects of knowledge and knowing that were described in the previous sections. For example, it is concerned with how epistemological beliefs affect thinking and reasoning processes (Kitchener & King, 1981; Kitchener, King, Wood, & Davison, 1989; Kuhn, 1991). Kitchener and King (1981) focused on aspects of critical or reflective thinking, whilst Kuhn (1991) explored the skills of argumentative reasoning. Both areas of research are based on assumptions that reasoning skills (whether reflective or argumentative) are directly related to assumptions about knowledge (Hofer & Pintrich, 1997).

Kitchener and King (1981) demonstrate that developmental shifts in adult thought are associated with changes in assumptions about knowledge and reality (King, Kitchener, Davison, Parker & Wood, 1983). Reflective judgement is evaluated by the Reflective Judgement Interview (King & Kitchener, 1994): a structured, standardised measurement tool that focuses on four ill-structured problems. For each problem, participants are asked to state and justify their point of view, and respond to six follow-up questions that explore what they thought and their rationale for such thinking. King and Kitchener's (1994) cognitive developmental stage model is supported by a strong empirical base that includes a ten year longitudinal study, and the outcomes of fifteen years of interviews with a variety of samples ranging from childhood to middle age. Their samples typically comprise secondary students, tertiary students or educated adults. The Reflective Judgement model consists of:

seven distinct sets of assumptions about knowledge and how knowledge is acquired. Each set of assumptions has its own logical coherency and is called a stage. Each successive stage is posited to represent a more complex and effective form of justification, providing more inclusive and better integrated assumptions for evaluating and defending a point of view (p. 13).

The seven stages are outlined in Table 2.4.
Table 2.4: Summary of King and Kitchener’s Stages of Reflective Judgement

<table>
<thead>
<tr>
<th>Stage</th>
<th>View of Knowledge</th>
<th>Concept of Justification</th>
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<tbody>
<tr>
<td><strong>Pre-Reflective Thinking (Stages 1, 2, and 3)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Knowledge is simple, concrete and absolute. It is obtained by direct observation.</td>
<td>Beliefs need not be justified since a one-to-one correspondence exists between the truth and what is believed to be true.</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge is absolutely certain or certain but not immediately available. It is obtained by observation or from authorities.</td>
<td>Beliefs are unexamined and unjustified or justified by their correspondence with those of authority. Everything has a right answer.</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge is absolutely certain or temporarily uncertain. In areas of uncertainty only personal beliefs are known until absolute knowledge is obtained from authorities.</td>
<td>Beliefs are justified by reference to authority or if answers do not currently exist, defended as personal opinion.</td>
</tr>
<tr>
<td><strong>Quasi-Reflective Thinking (Stages 4 and 5)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>One cannot know with certainty, so knowledge claims are personal.</td>
<td>Beliefs are justified by giving reasons and using evidence, but arguments and choice of evidence are idiosyncratic.</td>
</tr>
<tr>
<td>5</td>
<td>Knowledge is contextual and subjective since it derives from personal interpretation and judgement.</td>
<td>Justification of beliefs is context bound and context specific.</td>
</tr>
<tr>
<td><strong>Reflective Thinking (Stages 6 and 7)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Knowledge is constructed on the basis of a variety of sources. Interpretations are based on evaluations: of evidence across contexts; and opinions of reputable others.</td>
<td>Beliefs are justified by comparing evidence and opinion from different perspectives or across different contexts and constructing solutions that are evaluated by criteria.</td>
</tr>
<tr>
<td>7</td>
<td>Knowledge is acquired through a process of inquiry in which solutions to ill-structured problems are constructed and evaluated and re-evaluated.</td>
<td>Beliefs are justified according to interpretive considerations. Conclusions are defended as representing the most complete understanding.</td>
</tr>
</tbody>
</table>

(Source: adapted from King and Kitchener, 1994, p. 14-16)

King and Kitchener (1994, p. 47) characterise Stage 1 in terms of a "concrete, single-category belief system" that assumes that "what I have seen is true." This stage is typical of childhood. In contrast, knowledge at Stage 4 is described as uncertain and idiosyncratic to the individual. For example: "I'd be more inclined to believe it [evolution] if they had proof. It's just like the pyramids. I don't think we'll ever know" (King and Kitchener, 1994, p. 60). This stage is more typical of adolescence (Kitchener, Lynch, Fischer & Wood, 1993). At Stage 7, knowledge is acquired through a process of reasoned inquiry. Solutions to problems are constructed on the basis of evidence and subjected to a
continual cycle of evaluation and re-evaluation as new evidence becomes available. Typically, the later stages are shown only by educated adults. They are characterised in terms of the ability to: "integrate several abstract concepts of knowing, which allows [individuals] to move beyond the focus on uncertainty to consider using evidence and the process of inquiry to justify conclusions." (Kitchener, Lynch, Fischer & Wood, 1993, p. 894). Each stage reflects a network of inter-related epistemic assumptions that are supported by a particular way of reasoning.

The Development of Cognitive Skills

In contrast to Kitchener and King (1981), Kuhn (1991) explored the informal reasoning of everyday lives. However she too presented her participants with a series of ill-structured (urban, social) problems and asked them to generate causal explanations. Using a sample of 169 individuals whose ages ranged from adolescence to 60 years of age, and in which each sex was equally represented, she devised a simple three stage scheme comprising: absolutist, multiplist and evaluative thinking.

Others have devised models that provide similar developmental frameworks. For example, Kitchener (1983) proposed a cognitive developmental three tier model comprising: cognition, metacognition and epistemic cognition. Kitchener asserts that each tier acts in conjunction with the other, yet it is presented as a linear, age-related scheme. Cognitive and metacognitive skills start to develop in childhood and adolescence and continue throughout adulthood, whilst epistemic cognitive monitoring or reasoning develops in late adolescence and adulthood (Kitchener, 1983). Another example is Fischer's (1980) cognitive skill theory. Building on Piaget's genetic epistemology, Fischer defines the development of cognitive skill in terms of a transaction or action between the individual and the environment. Fischer's structural theory, including aspects of learning and problem solving, explains cognitive development from child to early adulthood. His model comprises a formal "construction of hierarchically ordered collections of specific skills" (p. 477). He provides an overview of the scheme:

Skills develop step by step through a series of 10 hierarchical levels divided into three tiers. The tiers specify skills of vastly different types: sensory-motor skills, representational skills, and abstract skills. The levels specify
Chapter 2: A Developmental View of Ways of Knowing

skills of gradually increasing complexity, with a skill at one level built directly on skills from the preceding level" (Fischer, 1980, p. 479).

Fischer defines four possible structures within each level: a single set; a mapping (comprising two related sets); a system, consisting of subdivided sets; and a system of systems. Visual metaphors are used to illustrate increasing spatial dimensionality from the single set to multiple systems.

In another example, Kramer (1989) posits a framework of seven levels of development of relativistic and dialectical reasoning that show increasing differentiation and integration: from little or no differentiation; to differentiation and integration of cause-effect sequences; differentiation and integration of consistencies and inconsistencies into systems; contextual differentiation of systems; and dialectical integration of systems into evolving social structures. Kramer's (1989) levels do not represent development from one logical structure to another. Rather, the abstract thought of formal operations is "further differentiated and integrated into more encompassing levels of organization." (Kramer, 1989, p. 156).

Comparisons Across Studies—Development as Upward Progression


More specifically, the upper stages of the Reflective Judgement model and Kuhn's (1991) argumentative reasoning, and Kramer's (1989) levels of relativistic and dialectical reasoning, all provide theoretical elaboration and structural extension of Perry's scheme. Indeed, Kuhn's (1991) main contribution was to relate the skill of argumentative reasoning with a level of epistemological development that is based on inquiry. However, only her evaluative category provides evidence of argumentative reasoning, a form of thinking that requires
skills of "contemplation, evaluation, and judgement of alternative theories and evidence" (Hofer & Pintrich, 1997, p. 105).

All of these studies characterise the development of epistemic beliefs and reflective thinking as an upward progression (Baxter Magolda, 1992; King & Kitchener, 1994; Perry, 1970). For example, in King and Kitchener's (1994) ten year longitudinal study, 92% of the sample increased their reflective judgement score over time. The pattern of change showed "slow, steady emergence of reflective thinking during early adulthood" (p. 137). Similarly, in Perry's (1970) study, while the modal starting point for freshmen was position 4, 75% of the students in his sample reached positions 7, or 8. Moreover, out of a total of 120 ratings for 20 senior students, judges used position 9, 13 times. The pace of Baxter Magolda's (1992) participants' passage from less to more complex ways of knowing matches that of Perry's developmental positions and Kitchener and King's (1994) stages of reflective judgement. The distribution of ways of knowing by year of study in Baxter Magolda's study is shown in Figure 2.1.

Figure 2.1: The Distribution of Ways of Knowing by Year of Study (Baxter Magolda, 1992, p. 71)
As might be expected within a developmental framework, absolute knowledge declines with progress through college. Transitional knowing increases and declines during the five years whereas the more relative independent and contextual ways of knowing increase towards junior and senior years.

**The Issues and Tensions of Researching the Development of Ways of Knowing**

In the first half of this chapter I outlined two strands of research that were concerned with the nature of epistemic beliefs and the development of ways of knowing. In the second half of the chapter I problematise the notion of development that is inherent in this research. Perry (1970) acknowledges that his work was strongly influenced by that of Jean Piaget, a fact that may explain why much of the later research on the development of epistemic beliefs is based on Piagetian assumptions. Although I have not adopted a constructivist framework in this thesis I too am interested in Piaget's theory of knowledge because of the pattern of integration of referent and structure that is evident in the data, that I mentioned in Chapter 1. Thus, I briefly explore Piaget's genetic epistemology and its influence on the literature on epistemic beliefs. I draw attention to Piaget's notion of stages as an equilibrium between structural and constructivist processes that exist together in a dynamic inter-relationship. I look briefly at some of the tensions associated with this interpretation of development and how his concepts have been taken up in research on epistemic beliefs. In particular, I argue that in research on epistemic beliefs the structural notions of development have been emphasised at the expense of more dynamic notions of change. Using this discussion as a base, I explore how we may avoid the traps incurred by traditional views of development and I pose possible alternatives that escape the rigidity of stage like structuralist interpretations.

**Piaget's Genetic Epistemology—Development as a Universal Structured Process**

Piaget's interpretation of genetic epistemology as *genesis* is illustrated in the question that I highlighted at the beginning of the chapter. He asks: "how does thought become increasingly coherent and give increasingly adequate explanations of reality?" (Montangero & Maurice-Naville, 1997, p. 5). His focus on increasing adequacy may have been prompted by the fact that his interest and much of his work centred on child development. However, such is his influence
on studies of adult development that a similar question could well be the focus of most of the studies that are described in this chapter and of those that are reviewed in Chapter 3. His genetic epistemology is constituted of both structuralism and constructivism. His *structuralism* reflects the influence of Gestalt psychologists, notably Koehler and Wertheimer (Boden, 1994; Piaget, 1950). His *constructivist* thinking is situated midway between Lamarckian innatism and Darwinian empiricism (Boden, 1994; Montangero & Maurice-Naville, 1997; Piaget, 1950).

The way in which Piaget integrates structuralist and constructivist perspectives in his theory of knowledge illustrates a unique universalism. He gives primacy to three key ideas: *wholeness*, *self-regulation* and *transformation* (Boden, 1994). He applies the idea of structure as a unified whole to all levels of action from large biological and social systems to the structure of thought. He defines structure in terms of the equilibrium of whole and part—a reciprocal and complementary relation in which the parts are characterised in terms of each other and their place in that whole, and vice versa (Montangero & Maurice-Naville, 1997). At a systemic level this view is evident in the way in which structures are constructed and reconstructed through stages from sensori-motor to formal operations. Within the individual, and between the individual and the environment, the theory is reflected in his active characterisation of the processes of self-regulation and transformation of cognitive structures or schemes. Moreover, both structure, and the construction of the content of the developmental task appear to be inseparable.

In the following sections I outline some principal aspects of Piaget’s theory of knowledge as the basis for subsequent discussion of the research on epistemic beliefs. For the sake of clarity I have separated the outline into a focus on *structural stages*, *constructivist processes*, and the way in which change and development is thought to occur—a simplification that belies the integral unity of Piaget’s overall scheme.

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4 Piaget’s notion of whole/part relations appears to be more dualistic than that ascribed to Heidegger and Gadamer in Chapter 1. Its effects are evident in his elaboration of assimilation and accommodation.

5 Of necessity I have only drawn on a small part of Piaget’s theory and I do not adopt its premises in the thesis. My purpose is to illustrate some historical influences and tensions at a general level.
The Notion of Stage

It is important to note that Piaget's concept of stage was methodological rather than epistemological. He used it to *categorise* data and its role was descriptive rather than explanatory (Montangero & Maurice-Naville, 1997). Piaget characterised stages in terms of four main criteria (Kohlberg and Armon, 1984). First, each stage is concerned with the overall structure or mode of thinking yet each differs qualitatively from its predecessors. The stages form an invariant sequence and together they comprise an organised structured whole. Each mode of thinking becomes increasingly complex in terms of differentiation and integration and the structure of higher stages integrates those of earlier stages (Kohlberg and Armon, 1984). In subsequent research on cognitive development, these criteria have been associated with the identification of a *hard* structural stage (Kohlberg & Armon, 1984) which has been interpreted, particularly in relation to formal operations, as "an abrupt and synchronised metamorphosis" (Flavell, 1971, p. 423). In this description we see the way in which Piaget's conception of wholism is maintained across stages. Despite the focus on difference and abrupt metamorphosis, the interaction between whole and part is maintained. Structural change comprises orderly *transformations* from one structural form or set of relations to another (Boden, 1994). Moreover, cognitive structures are *self-regulating* in that the nature of the whole is conserved by adaptive, compensatory transformations amongst its parts. The way in which this occurs is briefly summarised below.

Processes of Construction and Reconstruction

Piaget's constructivist processes are dynamic, both in their self-maintenance and change, and involve the individual in the increasingly complex recurring processes of *assimilation* and *accommodation*. Briefly, these processes comprise "two poles of an interaction between the organism and the environment" (Piaget, in Montangero & Maurice-Naville, 1997, p. 63). Piaget's notion of assimilation is the action of the subject on the object, while accommodation is the reverse (Montangero & Maurice-Naville, 1997).

Accommodation involves the creation, or active modification, of a cognitive structure or scheme in order to adapt to the environment or to what is being interpreted (Wadsworth, 1979). Piaget's processes of accommodation are the engine of change in his developmental theory. Their task is to enable an
individual to respond to the environment. The processes are important in such tasks as analysis, evaluation and experimentation and the achievement of objectivity and causal explanation. On the other hand, assimilation confers meaning on an object. In general it is the process or operation (e.g., classification or seriation) through which an individual acts on an object in order to integrate it into pre-existing cognitive structures or schemes. It occurs through a process of reflective abstraction from external reality or from existing representational structures to a higher level.

Piaget identified four kinds of assimilatory activities that occur at all developmental levels (Montangero & Maurice-Naville, 1997). Interestingly, the structural sequence of these four processes resembles that of the development of conceptions of understanding outlined in Chapter 1. Significantly, it is reflected also in the results reported in Chapters 5, 6, 7 and 8. Thus, these assimilatory processes are given more attention in the immediate discussion. The first, reproductive assimilation is a repetitive activity that is concerned with the conservation of what one knows. The second, recognitive assimilation involves discrimination or comparison between new knowledge and what was known previously to facilitate the selection of an appropriate scheme. The third, generalising or transposing assimilation allows the use of a scheme in new situations or with new objects and thus opens the way for the acquisition of new knowledge. Finally, reciprocal assimilation allows the co-ordination of schemes that initially may have been applied separately to the same content (Montangero & Maurice-Naville, 1997; Piaget, 1977).

**Continuities and Discontinuities—Development and Change**

Piaget characterised development in terms of continuity and discontinuity between successive stages (Boden, 1994). Despite their dialectical characteristics, assimilatory processes are continuous. However, re-organisation on a new plane is logically discontinuous in that new structures appear and previous structures are integrated into new structures as sub-systems (Montangero & Maurice-Naville, 1997). For example:

...the various transformations involved ... depend on each other [yet] because they amalgamate into an organized whole, each is really new despite its affinity with the corresponding intuitive relation that was already formed at the previous level (Piaget, 1950, p. 141).
Thus Piaget's developmental stages relate to and resemble each other but are observed also to differ from each other. For instance, although the new structures are constituted from some of the elements of previous structure they cannot be reduced to previous forms of knowledge (Montangero & Maurice-Naville, 1997).

This passage to a higher structure is achieved through accommodative and assimilatory processes in an interaction that is governed by the mechanism of equilibration. Equilibration is an internal cognitive process that involves the "quest for better forms of equilibrium" (Montangero & Maurice-Naville, 1997, p. 108). Thus, it is a continuing, dynamic and changing state which Piaget characterised as "progression with repetition" or a spiral in which analogous construction processes are involved in each change to a higher stage (Montangero & Maurice-Naville, 1997, p. 92).

The search for equilibrium is prompted by a state of imbalance or conflict of existing structures that exist either within the individual, or between the individual and what is evident to them in the environment. The fact that cognitive structures are characterised in terms of their content means that similar acts of reasoning appear asynchronically in different contexts. This kind of imbalance is interpreted as developmental discrepancy or décalage, meaning a time lag or gap (Montangero & Maurice-Naville, 1997, p. 25). The term refers to behaviour that is analogous but appears at different times. *Vertical* décalage involves the repetitive relearning of certain cognitive operations at each new stage along the vertical axis of development (p. 92). *Horizontal* décalage means that when an individual is described as having achieved a particular stage, it cannot be inferred that all the tasks of that stage can be performed equally well (Boden, 1994, p. 57). Thus it is concerned with activities that bring the individual back to a metaphorical starting point on the horizontal axis (Montangero & Maurice-Naville, 1997, p. 92). So décalage refers to variation or asynchronicity in behaviour or competence either within or between stages. Moreover, it is this asynchronicity that is the source of development because awareness of differences causes dis-equilibrium and dis-equilibrium leads to changes in structure and a more balanced or equilibrated state.

In Piagetian theory this process of equilibration is common to all levels of development (Montangero & Maurice-Naville, 1997). It too has been characterised sequentially in a way that resembles the sequential description of the four kinds of assimilatory processes outlined above. For example:
...that leads from intra-object (object analysis) to inter-object (analysing relations or transformations) to trans-object (building of structures) levels of analysis. ...this dialectical triad can be found in all domains and at all levels of development... (Piaget & Garcia, 1989, in Montangero & Maurice-Naville, 1997, p. viii).

In this passage the focus of attention changes from within the 'part', to between the 'parts', to the whole phenomenon. This sequence has been noted elsewhere (e.g., Marton, Watkins & Tang, 1997) and it is evident in my own data.

**Epistemic Beliefs—A Development-Centred Perspective?**

In the previous sections I provided a brief overview of Piaget's genetic epistemology. In summary, Piaget described the range of cognitive variation in development within and between age cohorts through the use of *structural* concepts. He applied dynamic *constructivist* concepts to account for the movement or morphing between structures. He used *contextual* and *content* variables to account for the variation that occurs outside of the general developmental framework. These three aspects of development are situated in dynamic inter-relation to account for age-linked differences in the development of thinking. Inherent in this description are several important issues for longitudinal research that focuses on development. In particular, the convergence of constructivism and structuralism brings its own tensions which continue to be evident in research that draws on Piaget's theories. In the following sections I outline some of the tensions and their associated implications for research on epistemic beliefs and reflective judgement, and for future research on the development of experiences of thinking and knowing.

**The Neglect of Constructivist Aspects of Adult Development**

Both Baxter Magolda (1992) and Perry (1970) used Piagetian notions of assimilation and accommodation to explain students' movement amongst different ways of knowing, or from position to position. King and Kitchener (1994) adopted a similar perspective in which "disjunctions" (p. 228) prompt a reconsideration and reinterpretation of existing beliefs. So in much of the research on epistemic beliefs, the processes of change from stage to stage tended to be assumed and were therefore not a focus of interest. This acceptance of a Piagetian kind of constructivism may have been supported by these researchers' observations of processes that resembled those that Piaget described. For
example, Belenky et al. (1986) and Perry (1979) observed repetitive patterns that resembled Piaget's notion of décalage in their data:

Our own developmental scheme portrays this kind of movement on the level at which a person undertakes the development of his "philosophical assumptions" about his world, beginning with those primitive forms characteristic of the beginnings of each of his previous developments at more concrete levels from infancy on (Perry, 1970, p. 29).

Like Piaget, Perry, (1970, p. 204) described this passage from less to more complex forms as an evolutionary spiral that involves processes that resemble each other: a "movement away from naïve egocentrism towards to a differentiated awareness of the environment" (p. 204, my emphasis). Such "awareness reflects back to create a new and differentiated awareness of self" forming a complex dynamic equilibrium that mediates between the individual and the environment (p. 204). It should be noted that this description, and that of Piaget's included above, resembles the progressive spiral of increasing complexity that was implied in Gadamer's (1989) transformative notion of the hermeneutic circle. However, where Perry emphasises an increasingly complex structure, Gadamer's notion of an increasingly complex understanding comprises structure and content.

Others have observed that ordered patterns of thinking are repeated at each stage or level of development. For instance, the pattern is reflected in Fischer's (1980) repetitive cycle of four skill levels within each developmental stage involving the formation of single cognitive sets; mappings of two sets; systems; and systems of systems. In addition, citing Biggs and Collis (1982), Case (1992, p. 169) describes a cyclic recursion through sub-stages at each general level: a "progression through exactly the same number of structural steps at each major stage, and ... these steps are traversed in exactly the same sequence." Both Case and Perry likened this recurring process to Piaget's notion of vertical décalage. It is also evident in Pascual-Leone's neo-Piagetian description of dialectical reasoning that includes restructuring through recentration and decentration at different levels of analysis (Kramer, 1989, p. 157), and in Boyes and Chandler's (1992) notion of second pass.

So there is evidence of sequenced, structured, repetitive patterns in ways of thinking, and the terminology used by Piaget and others to describe such repetitions implies that the processes are similar. It is also implied that what may
be being tracked by Perry and others is the individual's second, or subsequent pass through a similar pattern of thinking. But are the structures similar?

In order to clarify subsequent discussion I digress for a moment. I indicated above that Perry (1970) and his successors assumed a Piagetian conception of constructivism to explain the development of ways of knowing. However, a distinction between Piaget's genetic epistemology and the research on epistemic beliefs must be highlighted. In a significant shift in emphasis, Perry (1970) adopted Piaget's structuralism and constructivism at a general level but tended to ignore the content of thinking. Thus his scheme to a great extent is based only on the structure of patterns and forms. Subsequently, others (e.g., Baxter Magolda, 1992; Fischer, 1980; King & Kitchener, 1994) followed his example. This shift in emphasis removes the substance of the structure—the what from the how.

To return to the question—are the structures similar? Piagetian stages are understood to be related to each other, but to differ qualitatively from each other to the extent that the constitution of the new structure cannot be reduced to the previous form of knowledge (see p. 52 above). Moreover, the description of Piagetian restructuring, that I outlined earlier, suggests a view where the meaning of each of the parts contributes to the defining characteristics of the whole and vice versa. This concept of internally related aspects of experience is mirrored in Piaget's idea of horizontal décalage. This concept can be defined only in terms of the content of thinking, and only from within an analytical framework where structuralist and constructivist aspects of knowledge come together in an interactive process. However, research on adult development, and particularly that concerned with epistemic beliefs, assumes the idea of asynchronicity as a source of development but tends to neglect the notion of content. Yet, on its own, knowledge of the structure that underlies reasoning cannot provide evidence of asynchronicity (Montangero & Maurice-Naville, 1997). So this lack of recognition of the importance of content means that the question I posed above is not answerable from the perspective adopted by research on epistemic beliefs. Moreover, the adoption of the existing conceptual framework prevents the more dynamic constructivist processes of thinking that Piaget described to be explored to any great extent because there is nothing to focus upon in the construction.

6 The idea of internal relation is elaborated in Chapter 3.
This point is illustrated by reference to Perry's (1970) work and that of Belenky et al. (1986) and Baxter Magolda (1992). Perry's (1970) study set the scene for a radically new conception of educational research, in that, rather than testing prescribed variables under controlled conditions, he sought the perspective of the student "in their own terms" (p. 18). To some extent, his approach resembles the second order perspective of Marton (1981) that focuses on the learner's experiences of learning.\(^7\) In general, Belenky et al. (1986) and Baxter Magolda (1992) adopt a similar approach. The nature of the outcome is rich and thick description (Geertz (1973) that is carefully "nuanced" to a person's experience of their lifeworld (Kvale, 1996, p. 30). Some evidence of this kind of data is included in earlier parts of the chapter. This shift in emphasis to a more narrative approach shows a greater concern with the ontological description or meaning of experience. Nevertheless, the lack of concern for the content of knowing means that research on epistemic beliefs is able to provide a description of the stage (or level) and patterns that recur, but it is unable to describe and explain the meaning ascribed to the patterns or variation. This lack of focus on meaning may be related to the shift in emphasis from the content of thought to its more general structure (e.g., Perry, 1970) that is mentioned above. Interestingly, it was the description of evolving self, together with the longitudinal nature of the research, that led to Perry's production of a developmental scheme rather than the acceptance of variation as an outcome in itself (Perry, 1970).

The Invariance and Finiteness of a Hard Stage View of Development

In the following sections I shift focus to explore the implications of the structuralist influences on research on adult development and particularly that of epistemic beliefs. By the 1980s the question of stages was one of the most dominant (Kohlberg & Armon, 1984) and contentious aspects of research on adult development. One focus of critique was the invariant nature of the conception of developmental stage (Bidell & Fischer, 1992) and its lack of ability to take account of the more qualitative aspects of development.

Much of the research on epistemic beliefs adopts a structural universalism that derives from that of Piaget. Of the studies reviewed earlier in the chapter, only Kitchener and King's (1981) Reflective Judgement Model is framed as a hard stage model, although Perry (1970) acknowledges that his scheme reflects a

\(^7\) The differences between the two approaches are discussed in Chapter 3.
Piagetian framework, and Fischer's (1980) skill theory mirrors many of its attributes. Indeed, Perry, described the development he observed in his study as an evolutionary progress from simple to more complex positions in a sequential, logical "...order in which one form leads to another through differentiations and reorganizations required for the meaningful interpretation of increasingly complex experience" (Perry, 1970, p. 3). Thus, Perry focuses on progression in a scheme that implies the invariance of a stage model. Like Piaget, all three research programs claim a substantive positive correlation between age and stage (King & Kitchener, 1994; Kitchener, King, Wood and Davison, 1989; Kitchener, Lynch, Fischer and Wood, 1993; Perry, 1970). Thus, the critique of Piagetian stage theory may apply equally well to some of the research on epistemic beliefs. However, there is little to parallel such critique in the literature associated with the research on epistemic beliefs. Much of the following discussion focuses on the way in which a Piagetian like view of development has located research on ways of knowing in a particular, and perhaps limiting, conceptual frame.

The Search for a Description of Formal and Post-formal Operations

For instance, Perry (1970) noted that his later positions (7, 8, & 9) denote a "period of responsibility" that extends Piaget's stages to a new level (p. 205). Indeed, Perry claimed that his positions reflected the processes ascribed to Piaget's formal operations—an assertion that has been accepted by other researchers. This interest in the extension of Piaget's stages reflects a more general interest in the relation between formal and post-formal operations that is evident in much of the later work in the field of adult cognitive development (including research on epistemic beliefs). Neo-Piagetian research evolved in response to increasing debate about whether Inhelder and Piaget's (1958) formal operations of adolescence would suffice to explain the nature of adult intellectual thought and its continued development (Irwin & Sheese, 1989). So research in this area focused on different aspects of what has come to be called post-formal operations, for example: relativistic thought (Sinnott, 1984); dialectical thinking (Basseches, 1984); and awareness of contradiction (Kramer 1989). Thus, the way in which Perry associated his study with Piaget's stages of development appears to have been influential in locating future research in the same conceptual space.
Developmental Endpoints

The adoption of hard stages implies a "progression towards an expected end state" (von Glasersfeld & Kelley, 1982, p. 154)—a perception that was reinforced by Inhelder and Piaget's (1958) characterisation of formal operations as the structural endpoint of intellectual development. Perry (1970) too argued that after the shift to relativism there is little further structural change in students' thinking. Similarly, King and Kitchener assert that reflective judgement is "an ultimate outcome and developmental endpoint of reasoning and the ability to evaluate knowledge claims" (Hofer and Pintrich, 1997, p. 99). A claim that there is an endpoint in the development of cognitive structures is a reasonable assumption from within a structuralist perspective. Yet, from an experiential perspective the notion of growth or development as a process that ends at a predetermined or final endpoint is paradoxical. Paradox or not, these differences suggest that the issue lies in how we conceptualise development and what we choose to focus upon in research.

The Constraints of a Hard Stage Framework

A hard stage framework imposes other kinds of conceptual constraints. For example, the recursive processes that were observed in the research on epistemic beliefs were assumed rather than problematised. Perry's fourth cluster and final cluster of positions—commitment within relativism provides an example. The cyclic recursion that was evident in the early stages of his scheme appear to parallel those described by Piaget and others (see Chapter 2, p. 54). In contrast, in these later positions students shift away from such restructuring to qualitatively different features that comprise emotional and aesthetic judgements that reflect more affective, moral and ethical characteristics. Not only were these characteristics framed in terms of post-formal thinking, but they also appear to have been accepted as an end point of development to adulthood. What is significant is that this shift in emphasis recurs in various forms in other studies (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Marton, Dall'Alba and Beaty, 1993). Kohlberg and Armon (1984) argue that hard stages "cannot explain the unique characteristics of adult development, with its existential, reflective theories of the human condition" nor do they respond to more complex multi-dimensional aspects such as wisdom and aesthetics (p. 393) that may be involved in learning. Hard stages may not only prevent such explanation, but to conceptualise
development in terms of stages may well prevent us from seeing these characteristics. None of the studies mentioned above have focused on the nature of this shift in emphasis and what it may represent. In my own research a similar shift is evident and it appears to be integrally related to the development of skilled competence in learning and knowing.

So despite Piaget's assertion that a stage is only a categorical tool, the idea of stages presupposes a way of thinking about or *framing* development as an orderly progression from less to more complex forms of thought. What is made figural is the notion of progression rather than the meaning of phenomena that are involved. What are emphasised are the structural aspects of that progression while its constructivist counterparts are assumed. There is ample evidence for this assertion in the proliferation of research in which the results tend to emphasise schemes and models. Moreover, the fact that much of this area of research on development is limited by "an individual's mastery of formal logical categories" (Kincheloe & Steinberg, 1993, p. 298) reflects a rigidity that appears to belie Piaget's original intention. As a theory of knowledge it superimposes a frame of reference on a phenomenon that may not be appropriate for the development of adult ways of knowing and learning. In particular, stage like schemes are not able to account easily for the richness in individual variation, especially that associated with adult development.

*The Need For Contextual Relevance*

Despite the fact that some of the research on epistemic beliefs moved away from the idea of hard stages, Perry's (1970) shift in emphasis to a focus on structural aspects rather than constructivist processes appears to have been a decisive influence on its subsequent direction. For example, not only is there a lack of focus on content but the situatedness or context of knowing also receives scant attention. In some studies context is conceptualised quite narrowly as the effect of a single variable, for example, contextual support (Kitchener, Lynch, Fischer & Wood, 1993); gender, age and education level (Kitchener, King, Wood and Davison, 1989). This interpretation of context is another example of the way in which the focus on structure outweighs a consideration of the processes of change. The knowledge interest in these studies is the *development* of cognitive skill and the stages of development are given primacy while "environmental factors are seen to *contribute* to stage change" (Kitchener & Fischer, 1990, p. 53, italics my emphasis). In some of the research on epistemic beliefs context is
conceptualised more broadly. For example, there is evidence to suggest that context and life experiences play a role in adult development (e.g., Belenky et al., 1986). However, its effect was seldom acknowledged. Perry mentioned that his patterns and forms may be culturally related yet he gave little attention to the its effects. The lack of attention to content and context has an important corollary. On the whole, developmental stage models are reductionist in the way that they ignore prior experiences and strip "away the layers of the social from our analysis" (Kincheloe & Sternberg, 1993, p. 300). More importantly, the act of stripping allows "what are actually social constructions to be seen as natural processes" (p. 300).

In contrast, the perspectives of Belenky et al. (1986) and Baxter Magolda (1992) come closest to that adopted in this thesis. Their research interests focus on individuals' ways of knowing. Belenky et al. (1986) provide the most detailed account of the background of the women in their study and some of the effects of background were linked to ways of knowing. For instance, Silence was associated with abuse and social disadvantage. They adopt a narrative approach that attempts to embed the womens' ways of knowing in the context of their wider experiences. Nevertheless, their account is descriptive and their narrative comprises their account of the womens' experiences. Baxter Magolda (1992) too adopted a narrative approach that sought to describe students' stories. Her outcomes were not reported as story although she adopted a genre that enable her to separate her account from that of her participants. Thus, she provided her interpretation and the evidence to support it. However, her work hints at a shift in focus. For instance, she argued that students' reasons for their epistemological view were the basis for interpreting their response "because how people think and why they hold a particular view is more relevant to epistemological development than what they believe about a particular topic." (Baxter Magolda, 1992, p. 404, italics her emphasis). The separation of how from what reflects the lack of attention to content that was mentioned earlier. Yet, in her focus on how and why she attempts to provide an explanatory framework for the students' experiences. This approach to description focuses on understanding. It adopts an interpretive approach that captures ontological description and focuses on meaning, rather than that which provides a simple account. This issue is picked up and extended in Chapters 3 and 4.
Main Implications for Further Research

The previous discussion suggests that much of the research on the development of epistemic beliefs has been development-centric. Thus these studies focus on the stages of development and assume the nature of the processes of change. Furthermore, there are very few studies that adopt a systemic or wholistic view of the growth and development of a composite picture of adult ways of knowing and learning. Those that do (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970) neglect the content of thinking and knowing to the extent that they are only able to provide descriptive accounts of participants experiences.

Reconstructing Development—Possible Alternatives

In the final part of this chapter I explore alternative ways of looking at development. In particular, I look at the notion of soft stages and the idea of dimensions of learning and knowing. This discussion sets the scene for Chapters 3 and 4.

The Notion of Soft Stages

To counter the deficits encountered by the use of hard stages in research on adult development, Kohlberg and Armon (1984) proposed the concept of soft structural stages. In addition to cognitive elements, soft stages include affective and reflective qualities that are not accessible in research that adopts a hard stage perspective (Kohlberg and Armon, 1984). Nor do they follow a normative sequence, so development to higher soft stages is observed rather than expected. Moreover, in this view of stage, higher soft stages are often characterised as post-rational or mystical. Although the researchers themselves do not characterise their studies in this way, Baxter Magolda's (1992) ways of knowing and Belenky et al's (1986) categories may be interpreted in terms of soft stages. Both attempt to move away from the development-centric notions of stage models and adopt a concept of development that is more fluid and flexible. Unlike Perry's (1970) essential, universal and enduring forms, Baxter Magolda's patterns of reasoning constitute continuums that contain various possibilities. Similarly, Belenky et al. (1986) observe that their women's ways of knowing are not "fixed, exhaustive, or universal" stages, nor are they gender specific. Rather they are understood as perspectives that women adopt (p. 15). Nevertheless, their characterisation
Chapter 2: A Developmental View of Ways of Knowing

assumes or implies a progression from one way of knowing to another in the direction of more reflective and contextual ways of thinking.

Dimensions of Knowing

At the beginning of the chapter I alluded to three lines of research that focused on epistemic beliefs (Hofer & Pintrich, 1997) and I described the first two. The third line of research explores the effects of beliefs on knowledge and comprehension (Schommer, 1990). Schommer (1990, 1993, 1994) challenged the idea that a unidimensional conceptualisation inherent in the idea of stage could account for the complexity of personal epistemology. She proposed that personal epistemology is a complex belief system comprising five "more or less independent dimensions" (Schommer, 1990, p. 498). She explored these hypothesised dimensions with a series of studies that used vocabulary tests and self-report inventories (e.g., 1990; 1993). The dimensions were conceived to be continua. They are shown in Table 2.5.

Table 2.5: Schommer's Dimensions of Personal Epistemology

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Source of knowledge</th>
<th>Certainty of knowledge</th>
<th>Organisation of knowledge</th>
<th>Control of the ability to learn</th>
<th>Speed of learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Source of knowledge</td>
<td>Knowledge is handed down from authority.</td>
<td>Knowledge is reasoned through objective and subjective means.</td>
<td>Knowledge is compartmentalised.</td>
<td>Learning is genetically predetermined.</td>
<td>Learning is quick or not-at-all.</td>
</tr>
<tr>
<td>2 Certainty of knowledge</td>
<td>Knowledge is absolute.</td>
<td>Knowledge is constantly evolving.</td>
<td>Knowledge is highly integrated and interwoven.</td>
<td>Learning is acquired through experience.</td>
<td></td>
</tr>
<tr>
<td>3 Organisation of knowledge</td>
<td>Knowledge is compartmentalised.</td>
<td>Knowledge is reasoned through objective and subjective means.</td>
<td>Knowledge is highly integrated and interwoven.</td>
<td>Learning is acquired through experience.</td>
<td></td>
</tr>
<tr>
<td>4 Control of the ability to learn</td>
<td>Learning is genetically predetermined.</td>
<td>Knowledge is reasoned through objective and subjective means.</td>
<td>Knowledge is highly integrated and interwoven.</td>
<td>Learning is acquired through experience.</td>
<td></td>
</tr>
<tr>
<td>5 Speed of learning</td>
<td>Learning is quick or not-at-all.</td>
<td>Learning is reasoned through objective and subjective means.</td>
<td>Knowledge is highly integrated and interwoven.</td>
<td>Learning is a gradual process.</td>
<td></td>
</tr>
</tbody>
</table>

(Source: adapted from Schommer, 1994, p. 301)

Schommer (1990) concluded that epistemological beliefs affect learning and understanding. For example, belief in quick, all-or-nothing learning appears to affect the way in which students integrate knowledge, their accuracy, and what they conclude from the information that they learned (Schommer, 1990). Epistemological beliefs appear also to be generalisable across subject domains (Schommer, 1990; Schommer & Walker, 1995). Moreover, beliefs are affected by contextual factors like home and educational background (Schommer, 1990).

Schommer (1994) argues that her set of epistemological beliefs are not exhaustive. Rather, a system comprises multiple beliefs of which these five are
the basis. She characterises the dimensions of her scheme in a way that sets it apart from the uni-dimensional progression of fixed stages that is evident in cognitive developmental models. First, her dimensions are orthogonal (Schommer, 1990, p. 500). They are to be thought of independently but also together (Schommer, 1994). An individual's beliefs about knowledge do not develop synchronously or follow a general stage sequence. In contrast, at a particular instant in time, an individual may be located on different dimensions such as Certainty of Knowledge and Organisation of Knowledge in different places. Schommer and Walker (1995) provide an example: "some students could believe that knowledge is absolutely certain (naive view of the certainty of knowledge), yet they may also believe that knowledge is highly complex (sophisticated view of the organisation of knowledge)" (p. 425). To account for complexity, Schommer (1994) proposed that "personal epistemological dimensions may be pictured as frequency distributions rather than as a single point along a continuum" (p. 301). Thus, at any one time, an individual may occupy several points on the same dimension. For example, on the certainty dimension, it would be possible to think that knowledge is evolving, some is yet to be discovered, and some is unchanging.

The Implications of a Dimensional View of Knowing for Research on the Development of Experiences

I make use of Schommer's research in ways that she did not intend. However, her work provides an excellent basis for a summary discussion of the issues that this Chapter has thrown up for research on the development of experiences of learning and knowing.

A Move Away From Development-Centredness

First, Schommer shows how research on development is able to move away from the development-centric notions that were the focus of many of the studies described in the sections above. Her proposition of a dimensional view will allow the description of variation. Nevertheless, if the aim of research is to explore changes in ways of knowing, Schommer's research falls into the same trap that was identified in earlier parts of the chapter. She fails to include the content of thinking. So, although it may be possible to describe variation across the different dimensions, and to tap learners' experiences at different times, there is no potential for the exploration of how learners change within each dimension.
That is, it leaves the accommodative constructive processes out of the picture. Paradoxically, the challenge for studies of development is to de-emphasise the hard stage characteristics of development-centric approaches yet include the accommodative processes that are the engine of changes between stages. I take up this challenge in subsequent chapters.

Accounting for the Complexity of Individual Experience

As some of the studies that were discussed earlier demonstrated (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970) one of the main problems that is currently faced by research on the development of knowing, and indeed, learning more generally, is that of the complexity of an individual's experience. Research that recognises the multi-dimensional aspects of knowing and learning offers flexibility for the further exploration of the complexity of ways of learning and knowing. However, as Schommer, and to some extent, others (e.g., Baxter Magolda, 1992; Belenky et al., 1986) have demonstrated, complexity cannot be managed simply by assuming multi-dimensionality. Indeed, such treatment has the effect of atomising the richness of experience by separating a multi-phenomenal composite into separate parts. Schommer (1994) suggests that dimensions should be thought of separately and together. This notion of thinking of dimensions together hints at a conceptualisation of knowing as a composite of internally related phenomena. The notion of internally related phenomena was mentioned earlier in a discussion of structure and process (p. 52) where the inter-relationship of the meaning of the parts characterised each part and the meaning of the whole. This concept is also a focus of Chapter 3. However, the use of self-report inventories (e.g., Schommer, 1990) is not the method of choice if the aim is to explore either complexity or internal relatedness. Rather, what is required is a method that captures qualitative description of individual's experiences of knowing and learning.

Capturing the Range of Variation

The following point is also related to method. Schommer was able only to describe her dimensions in polar terms using from and to. In order to capture the full range of variation along a dimension, of say knowing, what is required is qualitative research that captures nuances of difference in experience. In addition, it requires analysis that is able to focus on those nuances. This issue is also addressed in Chapters 3 and 4. There is another point to be made here.
Schommer hypothesised her dimensions by drawing on a range of perspectives on beliefs relating to intellectual development (e.g., Perry, 1970); the nature of intelligence (Dweck & Leggett, 1988); and mathematics (Schoenfeld, 1985). Given the lack of research on dimensional aspects of knowing it may be more useful to explore the meaning that individuals attribute to the phenomenon.

**A Focus on Epistemic or Epistemology**

Much of the discussion in previous sections suggests that it is time to problematise the nature of knowing, and the relation between the individual, the environment and the development of thinking. However, one of the traps that development-centric approaches to research highlighted was the danger of isolating the knower from what is known by focusing only on the structural aspects of knowing. Citing Toulmin (1972), Polkinghorne (1989) suggests that:

...epistemics differs from epistemology in that its focus is on the human being as knower and the confidence humans place in their various forms of knowing, rather than on knowledge as an abstracted study limited to the study of the structures and internal relations of knowledge forms" (p. 38).

Yet much of the research reported here is concerned with Polkinghorne's notion of epistemology rather than epistemics. In this chapter I have tried to argue that issues of adult development cannot be resolved from within a structural stage perspective (Bidell and Fischer, 1992) whether they are functional, hard or soft (Kohlberg, & Armon, 1984). Instead, we must adopt an alternative view that allows the dimensional and phenomenal characteristics of knowing and learning to be explored. Belenky et al. (1986) provide an alternative and more constructivist view in their assertion that:

...our basic assumptions about the nature of truth and reality and the origins of knowledge shape the way we see the world and ourselves as participants in it. They affect our definitions of ourselves, the way we interact with others, our public and private personae, our sense of control over life events, our views of teaching and learning, and our conceptions of morality (p. 3).

Together these observations suggest that to be useful research must focus on the nature of the relation between knowers and what is known rather than one or the other. This is the focus of Chapter 3.
CHAPTER 3
EXPERIENCES OF LEARNING AND THEIR DEVELOPMENT

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CHAPTER 3
EXPERIENCES OF LEARNING AND THEIR DEVELOPMENT

Piaget has never been considered primarily a student of learning ... For Piaget's sake, then, we perhaps should recast the question "How do we gain knowledge about the world?" as "How do we develop knowledge about the world?" But if one is interested in learning as gaining knowledge through experience—as we certainly are—and if one is interested in development as gaining knowledge through experience as well—as we also are—the distinction between the two is rather slight (Marton & Booth, 1997, p. 6).

Introduction

This chapter focuses on how we develop knowledge of the world through experience. It fulfils two main functions. It provides an outline and review of research that is concerned with students' experiences of learning and its development, and it sets the scene for the research method that is described in Chapter 4. The research that is reviewed derives from a perspective that had its beginnings in the early 1970s. At that time a renaissance in educational research produced several programs that have contributed significantly to contemporary thinking about the way in which tertiary students learn (e.g., Biggs, 1978, 1979; Entwistle, Hanley & Hounsell, 1979; Marton, 1974; Ramsden, 1979). They evolved in response to interest and concern about the limitations of experimental and correlational methods that were in current use (e.g., Svensson, 1976).

One of the research programs, the Swedish Learning and Study Skill or Tillämpad Inlärnings Psykologi och Studiefärdighet (TIPS) project (Svensson, 1976, 1985) explored different aspects of students' learning. The program gave rise to an approach to educational research that was later called phenomenography: a term adopted by Marton in 1979 and first used in the literature in 1981 (Marton, 1986). In this thesis I use phenomenography as a basis for developing a way in which changes in university students' experiences can be explored. So I review research that is concerned predominantly with students' experiences of learning in higher education. From Gadamer's (1989) hermeneutic perspective I argue the case for an epistemological framework and consequential practices that are more plural and inclusive of the phenomenal field of a learner's experience of learning than those that are evident currently, in many phenomenographic studies. I also explore how research that is based on an experiential perspective can capture the ontological aspects of that experience at
both descriptive and explanatory levels. Several issues must be addressed if this is to be achieved. They are integrally related to each other.

1. The first issue is concerned with phenomenography—what is it and what is the nature of the knowledge of students' experiences of learning that it is able to provide. In this part of the Chapter I introduce the ideas of ontological description and explanation and how these differ from causal explanation.

2. The second set of issues is concerned with the way in which the relationship between knower and what is known is conceptualised. The problematisation of this relationship raises questions associated with theories of knowledge, and the perspective that is adopted. Practically, it is concerned with the ways in which we, as researchers, understand and act on this relationship.

3. The third set of issues is concerned with the status of the individual in our conceptualisation of phenomenographic ways of knowing. I look at how phenomenography interprets and describes the relationship between knower and what is known—that is, how learning is experienced by learners and/or by a learner. This distinction lies at the heart of my thesis. I extend this discussion with an elaboration of the knowing relation in which I borrow ideas from Gadamer's (1989) hermeneutics, Gurwitsch's (1964) Gestalt theory, and Marton and Booth's (1997) structure of awareness.

4. The fourth set of issues is concerned with how learners experience learning. Is learning as a phenomenon located at the centre of their experience? Do they think of it as the phenomenon of learning? Or does it comprise a phenomenal or conceptual field of potentially related phenomena such as learning, understanding, knowledge, knowing, and memorising etc? If it is the latter what are the implications for our research practices?

5. The fifth set of issues builds on the previous four. The issues focus on how we might think about the development of learners' experiences of learning. What is the nature of such development and how then should we account for it? In this final part of the chapter I draw together the main threads that emerge from Chapters 1-3 as a backdrop for the research reported in the thesis.

Phenomenography as an Approach to Research

According to Kroksmark, (in Marton and Booth, 1997) the word phenomenography derives from two words, phenomenon and graph. Phenomenon has its etymological roots in the Greek verb fainésqai—meaning to appear, or become manifest. Heidegger refers to phenomenon similarly, in terms of letting "something be seen as something" (Palmer, 1969, p. 128). Kroksmark suggests that the fa-stem implies that a phenomenon as a concept "is that which appears in its own right" and the word refers "to the collected totality of that which is made apparent or manifest" (Kroksmark, in Marton & Booth, 1997, p. 110). Graph derives from the Greek word grafia, "to describe in words or
pictures that which designates, for example, an aspect of reality or an experience of reality" (Kroksmark, in Marton & Booth, 1997, p. 110, italics their emphasis). Kroksmark argues that in combination with phenomenon, "graphy becomes the act of representing an object of study as qualitatively distinct phenomena" (p. 110).

A Focus on Ontological Knowing

Kroksmark's analysis captures the object of phenomenographic research. Phenomenography gives primacy to learners' experiences in their own right. In the 1970s this concern with ontological knowing, as the what or meaning of a phenomenon, represented a considerable departure from traditional educational research that tended to focus on causal explanations (Entwistle, 1976). In line with the research interest, this kind of understanding of students' experiences is usually gained through individual interviews that explore what is learned and how it is learned (e.g., Dahlgren, 1975a; Säljö, 1975). The focus on the what and how is now a central and essential characteristic of the phenomenographic research approach. An examination of the development of phenomenography reveals a subtle but significant shift in emphasis from a focus on the description of the meaning of the content of what is known, to that which is more concerned with a description and explanation of the meaning and structure of what is known. This is outlined below.

Ontological Knowing as Descriptive Variation

The focus of the early Swedish research was on the content of what was recalled. Phenomenography is premised on the assumption that "a prerequisite for an analysis of what is learned is that one must take into account the content of the learning task or discourse" (Marton & Säljö, 1976a, p. 4). Thus text reading tasks were used to explore outcomes of learning (i.e., what was learned) and their relation to students' approaches (i.e., how it was learned) (e.g., Dahlgren, 1975a; Marton, 1976; Marton & Dahlgren, 1976; Marton & Säljö, 1976a & b; Säljö, 1975; Svensson, 1976). After the text reading task, students were asked a series of open questions that focused on how they went about reading and what they were able to recall. The different ways in which the content of the text was comprehended were categorised. A set of categories of description represent the qualitatively or distinctly different ways (Marton, 1990, p. 603) in which a something is experienced (Marton & Booth, 1997). The different ways of
experiencing, as results, are presented as an outcome space or "analytic map" (Dahlgren, 1984, p. 26) of the variations in a study. An outcome space denotes "the qualitative variation in understanding" of a specific reading task (Wenestram, 1980, p. 64), or the "set of subjective meanings" or categories that derive from empirical research into that task (Dahlgren, 1975a, p. 16). In the early Swedish studies the categories were understood as levels of outcome. More recently, and in line with the increasing interest in the structural aspects of learning, an outcome space has been described as "the complex of categories of description comprising distinct groupings of aspects of the phenomenon and the relationships between them" (Marton & Booth, 1997, p. 125).

The focus on variation in experiences of learning was one of the main outcomes of the early Swedish studies (Biggs, 1993; Säljö, 1982). It provides an example of ontological knowing as descriptive variation. It has made a significant contribution to research on learning and its implications for teaching have been profound (e.g., Prosser & Trigwell, 1999; Ramsden, 1992). In addition to qualitative variation in outcome, the Swedish studies also demonstrated a functional relation between the outcomes of learning and how learners approached the learning task (e.g., Dahlgren, 1975a; Marton, 1975) and later, between learners' conceptions of learning and their approaches to a learning task (e.g., Säljö, 1979, 1982).

**Ontological Knowing: A Focus on Structure and Explanation**

Subsequently, there was also interest in the structural aspects of what was recalled (Fransson, 1977; Wenestam, 1980). For example, again using a text reading task, Wenestam (1980, p. 159) reported four main categories in which in addition to the focus on what was recalled, the categories of description also show the relations between the what and different aspects of the text:

1. understanding of the main point and its relation to the example.
2. understanding of the main point but not its relation to the example.
3. the main point has not been understood but some other main point exists.
4. a focus on one or more concrete examples.

Subsequently, both structure and content were analysed as a coherent entity (e.g., Renstrom, Andersson & Marton, 1990; Säljö, 1982). As phenomenography itself evolved, research that focused on both meaning or referential and structural (Marton & Booth, 1997) aspects increasingly assumed a more qualitative and
Chapter 3: Experiences of Learning and Their Development

hermeneutic character. Studies focused on learning itself (e.g., Marton, Dall’Alba & Beaty, 1993), and learning at the topic level, such as conceptions of mathematics or number (Ekeblad, 1996); learning to program (Booth, 1992); and conceptions of competence (Sandberg, 1994).

The change from a focus on the description of the what and how of content, to an interest that includes both the content and its structural analysis (e.g., Marton, 1988; Marton & Booth, 1997; Marton Dall’Alba & Beaty, 1993) is significant. This shift in emphasis to "discovering patterns and relationships" (Säljö, 1982, p. 59) and contemporary work on the structure of what is learned (Marton & Booth, 1997) shows the potential to emancipate an approach to research that is relatively descriptive (albeit with a focus on ontology) to an ontology that incorporates rich description and explanation. The differences between the causal explanation of traditional educational research approaches and this focus on ontological knowing are explored more fully in the next part of the chapter as a basis for the research reported in later chapters.

The Relationship Between the Knower and the Known

The idea of ontological knowing is premised by a particular relationship between a knower and what is known. Thus, the second set of issues is concerned with the way in which we think of this relationship between person and world, or learner and what is learned. The relationship sits at the centre of the following discussion and is a core concept in my thesis. First, I focus on a way of looking at the relationship in terms of the overarching theory of knowledge. Then I examine phenomenographic views of the relation between knower and known through an examination of the perspective that is adopted, the idea of internal relation, and the notion of conception or experience. Through this discussion I pick up and inter-weave threads that derive from Chapters 1 and 2 to provide a composite picture of relation between knower and known. I illustrate principal themes with relevant research.

A Non-Dualist Theory Of Knowledge

The first question that must be addressed is concerned with the nature of the theory of knowledge that underpins the way in which we look at the relation between the knower and the known. At the beginning of the 1980s, there was growing support at a general level amongst psychologists for the idea that the
mind is better understood in a non-dualist way. That is, that research should not separate inner cognitive processes from external activities and behaviour. This idea was not new. Indeed, in Chapter 1, the outline of the development of understanding traces historical changes in the relation between mind and knowledge. Chapter 1 also provides some illumination of how the nature of the questions that are asked about this relationship mediate the kinds of responses that are made. A similar but more recent trend is evident in psychology where antidualist critiques of the nature of consciousness have been evident since the turn of the century (Still & Costall, 1987). For example, the birth of behaviourism was premised on such critique. However, as a perspective, behaviourism tended to avoid the issue rather than solve it. Moreover, the mechanistic way in which some researchers interpreted and applied behavioural principles diminished much of the strength of William James' and Edmund Husserl's push towards a more relational and integrative view of mind and knowledge (Still & Costall, 1987). Later Piaget, and his successors, attempted to deal with the same issue through an elaboration of the development of the processes through which learners relate to their world. In this view, the internal cognitive structures provided explanation for the external relation. In contrast, social constructivists focused on the external relation as an explanation for the inner cognitive processes (Marton & Booth, 1997). So neither of these perspectives, nor those before them, have managed to escape the traps of dualist theories of knowledge.

So what does it mean for research on experiences of learning to assume a non-dualist view of the world? Like the approaches adopted by Heidegger and Gadamer, phenomenography purports to deal with this issue by trying to transcend it. For example, a focus on the learner's inner world or on their outer activities assumes that each exists as a separate entity. In contrast, for Gadamer the hermeneutic circle supersedes the separation of subject and object, and phenomenography assumes a non-dualist epistemology by thinking of the learner and their world in terms of an internal relation between the knower and what is known (Marton & Booth, 1997). Accordingly, in hermeneutics Gadamer conceptualises what is to be understood in terms of a spiral of experience or developing relation between the knower and what is to be known whereas phenomenography conceptualises what is to be understood as a change in the relation between the knower and what is known. Thus, despite superficial resemblances, there are differences between these two views. In the following sections I examine these ways of knowing in terms of the experience of learning.
Later in the chapter I also explore a possible distinction between the hermeneutic idea of development and the phenomenographic notion of change.

**The Adoption of a Second Order Perspective**

A crucial issue for the conceptualisation of the relationship between the knower and the known in research of learners' experiences is the perspective that is adopted. Previously, educational research has been concerned predominantly with studies that explore relationships between variables that are defined by the researcher. This kind of research focuses on predictive explanations of situations or causal relationships between different educational phenomena. For example, it might explore the way in which sex influences experiences of learning or the impact of context on an individual's approach to learning. In studies of learning, this way of looking not only separates the learner or knower from what is to be known, but it also tends to separate the researcher from the object of research. King and Kitchener's (1994) research on reflective judgement represents a sophisticated example of this way of thinking. For example, in the Reflective Judgement Interview participants are not only expected to deal with the researchers' ill-structured problems, but they are also asked to justify their point of view—their rationale for thinking about that knowledge in the way that they do.

Marton (1981) identified this focus on the researcher's perspective as the adoption of a first order perspective. In contrast, phenomenography adopts a second order perspective that is concerned with learners' experiences of learning or of the phenomenon involved in the learning task: what they understand and how they make sense of something. Marton and Booth (1997) suggest that this is a distinction between two "kinds of objects of research" (p. 119). For the researcher it is the difference between developing knowledge and making statements about the world or its phenomena (first order perspective), and making statements about others' knowledge and experiences of the world or phenomena (second order perspective).

Phenomenology, which has philosophical roots in common with phenomenography, makes a somewhat similar distinction between the phenomenal and the natural (Säljö, 1982). It was also hinted at by Perry (1970) when he differentiated between first-person and from the outside. The Swedish research drew on ideas from Gestalt psychologists Katona (1940) and Wertheimer
(1945), and Piaget's genetic epistemology (e.g., Dahlgren, 1975a; Säljö, 1975; Svensson, 1976). In all of these programs of research, the learners' experiences of learning and knowing were the focus of attention, as they were in the studies of Perry (1970), Belenky, Clinchy, Goldberger, and Tarule (1986), and Baxter Magolda (1992). Yet, once captured, learners' experiences have often been interpreted and/or accounted for in terms of the outside—or first order perspective. For example, changes in thinking in Perry's (1970) study were described from Perry's perspective rather than from those of the participants in the study. Nevertheless, a comparison of these studies with those that use a phenomenographic approach suggests that the differences may be a matter of degree.

However, the nature of recent critique of phenomenography suggests that it is important to make these differences in perspective explicit. Richardson (1999) argues, from what appears to be a first order perspective, that only the person who is experiencing can have access to their experience, and the researcher only has access to the experiencer's oral "account" (p. 66). According to Richardson, this idea of data as oral account is open to two kinds of interpretation. In varying degrees, both interpretations appear to derive from dualistic theories of knowledge. The first interpretation assumes that phenomenography is concerned with experience as an objective reality and thus it assumes a first order perspective. From Richardson's standpoint, it should be noted that this interpretation of phenomenography is unsurprising given that in some studies conceptions are described as being "found" (Marton, Dall'Alba & Beaty, 1993, p. 278) or "identified" (Eklund-Myrskog, 1998, p. 300) in the data. Moreover, the rapidity with which data is decontextualised in phenomenographic analysis supports this contention (this issue is addressed later in the chapter). The second interpretation rests on somewhat convoluted reasoning according to which phenomenographic results are the construction of an account that has been constructed by the learner (Säljö, 1997). Again, this interpretation suggests a critique from a first order perspective that has not taken account of the complexity involved in the cycles of conversation that occur as participants seek convergences in understanding. Yet, issues like these raised by Richardson (1999) and Säljö (1997) may not be resolved entirely from a standpoint of a first

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1 Despite intentions to the contrary, "found" may suggest that a conception is an objective reality.
order view of the world. Conversely, nor can they currently be explained by an approach that simply assumes a second order perspective and gives primacy to being open to the other's world view. Rather, the solution may lie in an exploration of a more hermeneutic approach in which there is an ongoing and iterative interweaving of both perspectives. I examine this idea in the sections below.

In phenomenography the distinction between first and second order is explained from a hermeneutic perspective by using Smedslund's (1970) discussion of the relation between logic and understanding (e.g., Marton & Booth, 1997). Smedslund asserts that logic (in its widest sense) and understanding are circularly related. So to make decisions about the logic of something we must take what is understood for granted but to understand something we must take the underlying logic for granted. He argues that in traditional research logicality is treated in an empirical way. For example, the learner's understanding is the focus of attention and their responses are deemed correct or otherwise according to some predetermined variable of the researcher's (first order perspective). If they are deemed incorrect then the learner is seen to be illogical. Thus from this perspective there is no way to tap the actual experience of the learner. If, on the other hand, the logic of the learner's response is accepted (second order perspective) there is a far greater chance of it being understood.

Two more points are of interest here. The first point is associated with Smedlund's (1970) argument about the need to accept the logic of the learner. His argument is premised on a reversal of relation from a focus on the interpreting person to a concern with the experience that is being interpreted. Such a reversal appears to be of significance. For example, it resembles the kind of reversal that we saw in Heidegger's elaboration of the meaning of phenomenology (e.g., Chapter 1, p. 16). It is also evident in my elaboration of transformative experiences of learning where participants talk of empathy for the other's view (Chapter 8). I revisit this point again in a discussion of Gadamer's (1989) spiral of increasing understanding later in this chapter. The second point is associated with Smedlund's focus on understanding and logic. These two aspects appear to reflect the phenomenographic interpretation of what and how as referential and structural aspects of experience (e.g., Marton & Booth, 1997).

Nevertheless, Marton and Booth (1997) indicate that the adoption of a second order perspective is not a simple case of focusing on the other's experience.
and making statements about it. Yet, in current phenomenographic practice the idea of a second order perspective is often treated simplistically. Moreover, Smedslund's conception of hermeneutic understanding appears to assume the kind of formal circularity that Heidegger and Gadamer tried to avoid. In order to understand these complexities we should look at a concrete example. In phenomenography, the object of research is to understand learners' experiences. According to Gadamer (1989) this kind of understanding is dependent also on an evolving self-understanding. As soon as I, as the researcher, enter into a relation with the knower and the known I bring to the situation my own experience (from a first order perspective) whilst also focusing on that of the other (a second order perspective). So this is not a static situation nor is it circularly recursive. Rather, it is a dynamic, evolving iterative movement that involves a constant change of focus between the other's experience and my own.

Gadamer (1989) argues that understanding is constituted from this kind of unity of meaning or mutuality of understanding. As an act, understanding is approached by both learner and researcher with that expectation. (As an aside, this kind of expectation or intentionality also underpins the logic of phenomenography.) As each part becomes manifest in the understanding situation, its meaning becomes projected to the whole situation or phenomenon. Moreover, a reciprocity of effect means that each new whole provides a context in which the part is re-understood so each sequential temporal instance is continually mediated to provide a constantly changing understanding. Thus the adoption of a second order perspective implies a transformational experience for both the researcher and the knower in their relationship with what is known. The implications for this difference in view between a simple circular movement, and an evolving spiral of meanings are marked.

On its own, the adoption of a second order perspective is only able to provide ontological description of experience. However, according to Gadamer (1989), the interrogation of an experience at the level of logic—that is, an ontological account at the explanatory level, requires an intrinsic focus on its structural and aesthetic aspects. Thus, in order to achieve ontological explanation we must problematise the relation between the researcher and the knower and what is known.
The Phenomenographic Idea of Internal Relation

In phenomenography, the adoption of a second order perspective makes possible the use of the idea of internal relation. It is one of the most important characteristics of the Swedish research. Indeed, Svensson (1985, p. 9) argues that "the distinction between internal and external relations is the most fundamental distinction to be made." Phenomenography is concerned with an ontological meaning of the relation between learner and phenomenon as an internal relation one to the other. It is this idea of internal relation and its elaboration that provides the potential for a non-dualist and integrative view of the world. It is also a core assumption of this thesis.

Approaches to Learning: An Example

The idea of internal relation developed out of the first generation of Swedish studies in the 1970s (Marton & Svensson, 1979) where an empirical relation was perceived to exist between a learner's approach to learning and the learning outcome or what was learned (e.g., Dahlgren, 1975a; Marton, 1975). This relation was observed first from the outside. A description of two different ways of understanding approach to learning provides an example of internal relation and the basis for further discussion.

In one of the Swedish studies, Marton and Säljö (1976a) identified two distinct levels of processing—surface and deep level processing that "correspond to the different aspects of the learning material on which the learner focuses" (Marton & Säljö, 1976a, p. 7). In surface level processing the learner's focus is on learning the text itself (the sign). The student "has a 'reproductive' conception of learning which means that he [sic] is more or less forced to keep a rote learning strategy" (p. 7). In deep level processing the student focuses on what is intended or signified by the author of the text. Thus "the different categories in an outcome space constitute the visible result of individuals having succeeded ... in breaking through the linguistic surface (the sign) and reaching the phenomenon (that which is signified)" (Dahlgren, 1975a, p. 16).

Using parallel, independent analyses of the same data, Svensson (1975) was able to point to an important methodological distinction that laid the foundation for a contemporary and more theoretical focus on the structure of experience (e.g., Marton 1988; Marton & Booth, 1997). Moreover, in Svensson's (1976) analysis
we also see the influence of the structuralism that derives from Gestalt psychology. For instance, in contrast to Dahlgren (1975a) and Marton (1975), in his research on skill in learning Svensson (1976, 1977) assumed that *what* is learned and the skill involved in learning (*how* it is learned) are two indistinguishable aspects of the same activity. He argued that:

...the starting point in research should not be in defined concepts and categorisations of data which are interrelated by the investigator [first order perspective], but in the relation focussed on, in the form of a delimitation of a relational concept. The empirical part of research is then equal to finding and describing the concrete meaning of the relational concept. This also means that the categorisations of data should not be made independently for different aspects of the phenomena, but rather delimited in relation to each other. The categorisations found to be related become a main result giving the concrete context-dependent meaning of the relational concept (Svensson, 1976, p. 187).

It was the realisation that what is learned and how it is learned comprise a relational concept that allowed Svensson (1977) to distinguish holistic and atomistic approaches from deep and surface level processing. A holistic approach involves "an orientation towards whole qualities" (Svensson, 1976, p. 169). So what is learned is the text as a whole which is constituted through "an organizing and transforming activity" (p. 169) that includes the skills of relating and reflecting. How it is learned is through understanding the author's intention and relating that to the context of the text (Svensson, 1977). An atomistic approach involves "an orientation towards part of the message" (Svensson, 1976, p. 169). Thus what is learned are disparate structural aspects of the text such as comparisons and sequences. How it is learned is through memorising the details whilst ignoring the whole (Svensson, 1977). In each case there is a coherent internal relation between what the learner focuses upon and how they go about learning. Svensson (1976) argued that a focus on the disparate parts of the text prevents relations being formed so he concluded that critical thinking is possible only through the adoption of a holistic approach. Accordingly, Svensson (1976) assumed that the structural qualities of these constructs comprise a fundamental aspect of *skill in learning*.2

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2 This idea of skill is picked up again later in the chapter and in a later part of the thesis.
Deep and surface levels of processing and holistic and atomistic approaches to learning became known subsequently as deep and surface approaches to learning. These constructs are well established in the literature (Entwistle, 1991) and represent "one of the most important insights in research in higher education carried out during the last 25 years" (Richardson, 1997, p. 301). I focused on these two forms of approach because they illustrate different aspects of internal relation. They also provide examples of the difference between descriptive and explanatory accounts of experience. For instance, the surface/deep construct captures the relational meaning of the phenomenon at a descriptive level—what (knowledge) is learned and how (approach) students go about learning. On the other hand, the atomistic/holistic construct includes the structural organisation of the experience and what the learner focuses on within that organisation. Thus it captures the intrinsic relational meaning at an explanatory level. That is, it provides a sense of not only what the experience is but also of why the parts are as they are—they are internally related for mutually informing/constraining reasons. At the time, Marton and Säljö (1984) suggested that the two methods involved in unpacking these two interpretations of approach to learning were underpinned by different epistemological assumptions. For example, in their analyses both Marton and Säljö, and Svensson focused on the relation between approach and outcome but whereas Marton and Säljö focused first on process and then outcome, Svensson treated them as a functional relation (Marton & Säljö, 1984). Where Marton focused on the variation in outcome, Svensson related the variation in outcome to the text itself (Svensson, 1976).

Marton and Säljö's (1976a) and Svensson's (1976) studies provide evidence that both methods of analysis are able to capture internal relations and provide results at the descriptive ontological level. However, results that focus on structural explanation require exploration from within the relation. Thus only Svensson's (1976) approach appears to be able to capture aspects of the explanatory level. This example suggests that it is important not only to adopt a second order perspective but also to treat the object of research as an internally related whole. I explore this in more depth in the next part of the chapter.

A Focus on Learners' Experiences Or a Learner's Experiences?

In previous sections I explored the relationship between knower and known. I proposed that phenomenography was concerned with ontological knowing. I introduced the idea of descriptive and explanatory knowing, and argued that
ontological explanation depends upon the adoption of both a second order perspective and internal relatedness. In this part of the chapter I focus on the third set of issues that is concerned with the status ascribed to individual's experiences in the conceptualisation of the object of research. The discussion is concerned with particular modes of knowing and knowing relations. It extends the idea of explanatory ontology. I also distinguish between a way of experiencing and ways of experiencing or knowing and I look at how each is explored, interpreted and reported. I continue to focus on the notion of internal relation. The discussion is of significance given that my thesis assumes that ontological knowing includes an explanatory framework that takes account of the individual in the knowing relation.

**Conceptions of Learning**

The idea of internal relation has become one of the main characteristics of phenomenographic research. The idea finds its most definitive expression in the notion of conception. A conception is an internal relation that exists between the knower as the person who is experiencing and the known or phenomenon that is experienced (Marton & Booth, 1997). Interpreted broadly, it may comprise a conception of knowledge or learning that the student brings to the learning situation, what they experience during a learning activity, or the outcome of that activity, or all of these aspects of the learning experience.

Säljö (1979, p. 2) understood a conception in experiential terms as an individual's "world-as-perceived" or more general conception of learning. More recently there has been a move away from the word conception to the more inclusive notion of experience (Marton & Booth, 1997). This meaning refers to "learning as coming to experience the world" (Marton & Booth, 1997, p. 33). In parallel with this shift, the notion of experience has been explored more fully (e.g., Marton, 1988; Marton Dall'Alba & Beaty, 1993; Marton & Booth, 1997; Marton, Watkins & Tang, 1997). To retrack, several aspects of the experience of learning were shown to be internally related. For example, Säljö (1982) demonstrated how deep and surface levels of processing and holistic and atomistic approaches are integrally linked in learner's experiences of learning. In addition, the relation between "what is learned (the outcome or the result) and how it is learned (the act or the process)" and the fact that they "are two inseparable aspects of learning" (Marton, 1988, p. 53) was well established in the early Swedish studies (Marton and Säljö, 1976a). Moreover, the same relation
was found repeatedly both quantitatively and qualitatively, for example: in essay writing (Hounsell, 1984); nursing (Trigwell & Prosser, 1991); mathematics (Crawford, Gordon, Nicholas & Prosser, 1998); and in learning more generally (Säljö, 1982).

Drawing on twenty years of this kind of empirical work, and in particular, Pramling's (1983) account of a similar distinction in children's thinking about learning, Marton and Booth (1997) recently elaborated the structure of experience to include the object of research, and its structural focus and features. The structure is premised on the argument that "to understand the single experience we have to understand the anatomy of awareness" (Marton & Booth, 1997, p. 108). Within the structure, the what and how that emerged from the early Swedish research assumes a central place. Marton and Booth's structure of experience provides part of the theoretical basis for the remainder of this chapter and my approach to analysis that is described in Chapter 4. It is elaborated below and summarised in Figure 3.1.

1. The what aspect is concerned with the content of what is learned. It comprises the direct object of the learning and it may be exemplified by students' conceptions at the topic level, for example, conceptions of mathematics (Crawford, Gordon, Nicholas & Prosser, 1994).

2. How something is learned consists of the act of learning and its indirect object. The act of learning is the way that the learner goes about learning. Its indirect object relates to the aspect of learning that is made figural in the act: the actual capabilities or skills that the learner focuses on and needs to develop in order to learn, for example, applying, rehearsal or understanding.

The what and the how constitute inseparable and fundamental aspects of the experience of learning (Marton & Booth, 1997). The object, act, and indirect object of learning are each described further in terms of structural and referential
Figure 3.1: Marton and Booth's (1997) Characterisation of a Framework for the Experience of Learning (p. 91).
aspects which comprise "the basic unit of experience" (Marton & Booth, 1997, p. 91), or a way of experiencing something (p. 111, italics their emphasis). Moreover:

...in order to see something as something ... we have to discern that something from its environment ... [and] in order to [do so] we have to ... assign it a meaning. Structure presupposes meaning, and at the same time meaning presupposes structure. The two aspects, meaning and structure are dialectically intertwined and occur simultaneously when we experience something (p. 87).

The referential aspects of the object, indirect object and the act, constitute their meaning. The structural aspects of both act and object of learning are delineated further by the way in which they are discerned from the external environment (external horizon); and how the parts are discerned from and related to each other, and to the whole of which they are a part (internal horizon). In their identification of the horizon of experience, Marton and Booth (1997) draw on Svensson's characterisation of the structural aspects of a conception as the "internal functional character" of the phenomenon and its delimitation from its context or background (in Marton, Dall'Alba & Beaty, 1993, p. 278).

Marton and Booth's structure of experience is not only able to capture a description of experience but it is also able to provide the rationale for the experience that is the basis of an ontological explanation. My interpretation of Marton and Booth's framework has been influenced by Gadamer's hermeneutics which invites the question: why are these phenomena related in this way? The inclusion of its structural aspects provides the referent of the experience with an organisational rationale. That is, the way in which the parts are internally related characterises the meaning of the experience. This interpretation of Marton and Booth's framework is elaborated later in this chapter and in Chapter 4.

The Orientation of This Thesis: A Brief Comment

Marton and Booth's (1997) structure of experience is inclusive in that it takes account of the whole learning experience. Yet different research studies may focus on particular aspects such as learning a particular topic (the object of learning). Research that focuses on learning at a general level (e.g., Marton et al., 1993; Säljö, 1979) tends to focus on the how of the experience. However, the
inclusion of a text reading task in the later part of Säljö's (1982) study refocuses the research interest to the what and how. Like Säljö's study, this thesis focuses on learners' experiences of learning. The direct object of learning, that is, what is learned at the topic level is not the main focus of attention. Yet, the fact that experiences of learning are context dependent (Laurillard, 1979; Entwistle & Ramsden, 1983; Ramsden, 1981) suggests that both the what and the how of the experience should be explored as an internal relation. In my own research I do so by asking the learner to choose the object of research and we talk about their examples.

More General Orientation: A Summary

Theoretically, the ideas that underpin phenomenography derive from philosophical traditions that also gave rise to phenomenology, Gestalt psychology and hermeneutics. So this contemporary interest in the development of an explanatory framework that is grounded in the nature and structure of experience is unsurprising. The movement in this direction is also a logical extension of the early interest in what and how structures, and the emphasis on internal relation. Moreover, the distinction between structural and referential aspects parallels that between the phenomenological use of noema (what is experienced) and noesis (the act of experiencing) respectively (Marton, 1988; Marton Dall'Alba and Beaty 1993). What Marton and Booth's (1997) structure of awareness actually achieves in terms of the potential for ontological explanation of experience is a significant shift in direction for phenomenography itself. It signals a change of emphasis from descriptive variation to the structural aspects of experience as defined by the relations between acts and objects of learning (e.g., Marton & Booth, 1997). In fact the what/how structural framework is the engine of explanatory ontology.

Experiences of Learning: A Focus on the What and How

The shift from descriptive variation to a more explanatory focus is particularly evident in a comparison of two qualitative interview studies on conceptions of learning (Marton et al, 1993; Säljö, 1979, 1982). These studies prompted the knowledge interest of this thesis. Both are well documented elsewhere (e.g., Marton & Booth, 1997; Marton, Hounsell & Entwistle, 1984; Prosser & Trigwell, 1999; Ramsden, 1992). At a general level, their results have been replicated repeatedly (Eklund-Myrskog, 1998; Giorgi, 1986; Martin & Ramsden, 1987; van Rossum, Deijkers & Hamer, 1985; van Rossum & Schenk, 1984).
Säljö's (1979, 1982) study was specifically designed to explore peoples' more general ideas and beliefs about the nature of learning and the possible relation between these and their learning activities (Säljö, 1979, 1981, 1982). Prompted by Säljö's research and a rising interest in the structural aspects of learning, Marton, Dall'Alba and Beaty (1993) sought a more precise characterisation of learners' conceptions of learning. The categories of description from both studies derived from data that were generated by Säljö's (1979) now famous question: "what do you actually mean by learning?" (p. 9).³ Marton et al. (1993) replicated and extended Säljö's work with the addition of a sixth category. They are listed below:

A Learning as increasing one's knowledge.
B Learning as memorising and reproducing.
C Learning as applying.
D Learning as understanding.
E Learning as seeing something in a different way.
F Changing as a person.

Both studies provide examples of ontological description of learners' experiences, particularly in terms of memorising and understanding. For example, in category B, "the meaning ... of learning is to memorize and be able to reproduce something" and it is "often seen in quantitative terms ... as the exact (rote) reproduction of the learning material" which is oriented towards an assessment task (Marton et al., 1993, p. 286). In both studies, there was descriptive variation in students' experiences of knowledge ranging from knowledge as quantitative, discrete ready-made pieces of information (category A), to units of information (category B), to knowledge that is a greater whole or a whole unit (category E). Like research on epistemic beliefs (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970) experiences in the later categories show an increasing awareness of the relative nature of learning and knowledge (Marton et al., 1993; Säljö, 1979) and increasing levels of abstraction (c.f., Svensson, 1976).

³ This question has since been used in a number of other studies (Dahlin & Regmi, 1997; Marton, Dall'Alba & Beaty, 1993; Marton, Dall'Alba, & Tse, 1993; Marton, Watkins & Tang, 1997; Mugler & Landbeck, 1994, 1997; Nagle & Marton, 1993). It is also a principal question in the current study.
The Significance of the What/How Framework

However, the main difference between Säljö's (1979) and Marton et al's (1993) studies is seen in the way in which Marton et al. were able to distinguish the different structural aspects of the experiences through their use the what/how experiential framework (Marton & Booth, 1997). The result is not only a distinction between what learners focus upon and how their experience is structured, but there is also the potential for the coherence of the relation between the what and how to be made visible as an internal relation. Take a simple example that is well known. In Learning as increasing one's knowledge, the referential aspect of learning is "to increase your knowledge" (Säljö, 1979, in Marton et al., 1993, p. 284) and the structural aspect of the act is "well, you kind of start with a small bag and ... the longer you live the more you fill it up" (p. 284). Note the intrinsic coherence that exists between the two parts. The explanation or rationale for a view of learning that focuses on increasing is one in which knowledge is incremental. Structurally, the experience appears linear and uni-directional: you learn—you fill up. This is represented diagrammatically in Figure 3.2.

![Diagram](image.png)

Figure 3.2: The Uni-directional Linearity of Learning as Increasing One's Knowledge

A more complex example is evident in Learning as changing as a person. Marton et al. (1993) note that the conception adds an existential aspect of learning to conceptions D and E (p. 292) which is evident in learners' use of organic metaphors such as it "lights you" and "expanding yourself" (p. 292). Like the first example, the structure of the experience is visible in the following:

by developing insights into—or a view of—the phenomenon dealt with in the learning material, one develops a new way of seeing those phenomena, and seeing the world differently means that you change as a person (Marton et al. 1993, p. 292).
Here the explanation is based on an existential view of the person/world relation. The experience of learning as developing, seeing something differently, and changing, is open ended. In this experience, learning can be likened to the kind of transformative, continuously evolving spiral that resembles Gadamer's notion of transformative understanding (see Chapter 1, p. 19). It also resembles the process of integration of the referent into the structure of the experience that occurs in the data in this study. The structure is shown diagrammatically in Figure 3.3.

![Figure 3.3: An Ontological Explanation of Learning as Changing as a Person—an Example of The Spiral of Transformation](image)

**A Way of Experiencing**

In what follows I provide an advance organiser for a discussion in which I argue for a different view of internal relations in analysis. In it, I use my own research and Marton and Booth's (1997) structure of experience to provide an example of the integral coherence of a learner's experience (see Figure 3.4). My use of a single individual's data rather than the more traditional phenomenographic category, is intentional. It comprises part of the argument for a focus on the individual in the *knowing relation*.
Anna's Experience of Learning

**What**

- Direct object
  - Empowerment as the ability to change something

**How**

- Act of learning
  - To empower herself
    - Referential aspect
      - To change and have confidence in your knowledge and beliefs.
    - Structural aspect
      - Broadening your horizons, becoming more aware of things around you.

- Indirect object
  - Being empowered
    - Referential aspect
      - As the ability to change something
    - Structural aspect
      - A process of change.

**External horizon**
- Life experience.

**Internal horizon**
- Being able to internalise and process information. Reflecting on and being critical of experience.

**External horizon**
- Person acting on the world-wide horizon, relevance in multiple contexts.

**Internal horizon**
- Becoming aware of a situation, seeing it differently, having confidence and effecting change.

**Structural aspect**
- If a situation arises you can do something to change it. You can make an impact. You can affect your life, influence it and change its path.

Figure 3.4: The Structure Of Anna's Experience of Learning About Empowerment
Anna's Experience of Learning

The data from which this example derives were obtained from an interview with Anna towards the end of her second year of study in a psychology degree program (which she entered from school). She had just learned about empowerment so she talked to me of that experience. Anna understands learning in terms of change and development.

What is Learned

Anna conceptualises empowerment (the direct object of learning) as the ability to change something (right hand side of Figure 3.4). She applies this idea of empowerment to her own life world which is the external horizon of the object of learning. Thus, the referential aspect of the object of learning is to have a sense of control over her own life. She also enacts the concept in the way in which she views the world. For instance, structurally, empowerment includes notions like being able to change a situation, make an impact, and influence the direction she takes. The internal horizon of the experience is evident in the idea of empowerment being related to a growing sense of self, self-confidence and self-esteem. In my data, these characteristics are associated with transformative experiences of learning.

How the Object is Learned

The how of Anna's experience of learning (left hand side of Figure 3.4) is integrally related to the topic itself. What she focuses upon in the how, that is, the indirect object is concerned with being empowered. So the referential aspect of the indirect object is a process of change. The structural aspects are to change the way you think by learning from experience. The act of learning is integrally related to both the indirect object and the object of learning. Anna understands the act of learning in terms of change. The referential aspect of the act is to have confidence in her knowledge and beliefs. The structural aspects are concerned with broadening her horizons, becoming aware of herself and the things around her. Her external horizon is her life experience.

A Way of Experiencing: The Shift From the Notion of Conception to Experience

In this brief analysis (albeit bereft of supporting qualitative data) I provide an example of the way in which experience may be interpreted. The analysis not
only captures the internal structural relations of Anna's experience but it also
demonstrates its coherence and contextual relevance. The example illustrates the
inseparableness (e.g., Marton & Booth, 1997) of parts and whole. It provides also
an illustration of explanatory ontology. For instance, each part of Anna's
experience relates logically to the other and to the experience as a whole. Each
part of her experience explains and gives meaning to, yet also constrains the
meaning and explanation of, the other, and the whole. The analysis captures these
internal structural relations within the contextual relevance of Anna herself. This
is evident in her interpretation of the meaning of empowerment in terms of her
lifeworld. There is also a consistency in the way that Anna returns to the same
foci in both the act and object of learning.

The examples of Anna and Marton et al's (1993) study show how an
exploration of the learner's logic or explanatory framework furthers our
understanding of the experience. They also illustrate the intrinsic relation that
exists between description and explanation. Furthermore, the example of Anna
shows how the shift from 'conception' to 'experience' has the potential to remove
the tensions that have been associated with the way in which conception has been
linked with cognitive mental models. As an umbrella term, experience allows
different aspects of learning such as conception, approach and outcome to be seen
as an internally related coherent structure. Unlike the word 'conception' that tends
to be perceived in terms of a static instance in time, the notion of experience takes
account of the simultaneity and complexity of thinking, and the dynamic and
evolving nature of learning and understanding. The use of 'experience' as
experiential also allows a reconceptualisation of the relation from learner and
context, to learner in context where each relates to the other in a world in which
knowledge is mutually constructed and modified.

This point raises a significant issue. It is illustrated by my treatment in
Figure 3.4 of Marton and Booth's (1997) structural framework (Figure 3.1). In
phenomenography, the analysis focuses on the collective level. Thus, it is not
constrained by a search for structure (represented in Figure 3.1) as it might apply
only to the experience of an individual. In contrast, I have used their framework
and applied it entirely to an individual's experience. This issue is taken up in
further discussion.
Ways of Experiencing and the Place of the Individual

In the section above I outlined Marton and Booth's (1997) more general framework for the structure of experience and an example of a way of thinking about individual experience. In the following section I build on the example of Anna to explore the notion of ways of experiencing and the way in which they are constituted as the object of phenomenographic research. In Chapter 1, the central notion of experience was the person's life world. So I draw attention to the fact that, despite the phenomenographic focus on experience, what tends to dominate is the phenomenon at the expense of the individual in their life world. More specifically, I look at how this interpretation of phenomenon affects approaches to analyses and introduces issues of decontextualisation of experience from the person's lifeworld.

Experience and the Metaphor of Figure/Ground

In phenomenography, and at the level of the individual, experience or awareness is often described in terms of the Gestalt idea of figure/ground, and particularly Gurwitsch's (1964) view of awareness (e.g., Marton & Booth, 1997). Gurwitsch (1964) proposed that a "total field of consciousness" (p. 4) comprises three domains: the theme, the thematic field and the margins. The theme or the object of focal awareness "occupies the mind of the experiencing subject" (p. 4). So in the example of Anna, the theme was her notion of empowerment as an ability to change something. The thematic field is the "totality of those data, co-present in the theme, which are experienced as materially relevant or pertinent to the theme and form the background or horizon out of which the theme emerges as the center" (p. 4, my emphasis). In Anna's case the thematic field comprises her life world—how she is able to enact this view of empowerment to influence and effect change in her life. The thematic field thus provides the theme with contextual relevancy—a notion that is explored in a later section. The margins comprise the totality of data "which, though co-present with, have no relevancy to the theme" (p. 4).4 So from a phenomenographic perspective, and using

4 The ideas of theme and thematic field will be revisited in a later section. Meanwhile, I continue to focus here on the object of phenomenographic research and how it is able to take account of the individual.
Chapter 3: Experiences of Learning and Their Development

Gunwitsch's (1964) framework, a particular notion of empowerment is thematised or made figural and given meaning through the way in which the particular parts are related. Yet, these structural features allow it to be discerned from but related to its thematic field or context (Marton & Booth, 1997). A way of experiencing can "thus be described in terms of the structure or organisation of awareness at a particular moment" (p. 100, italics my emphasis).

The Object of Phenomenographic Research

However, the object of phenomenographic research is the different ways in which something can be experienced. The qualitatively different ways of experiencing something are understood "in terms of differences in the structure or organisation of awareness at a particular moment or moments" (Marton & Booth, 1997, p. 100). Note the focus on moment in the last sentence and above. What is implied is that individuals may experience something in different ways within a short socio-temporal-spatial frame. Support for this interpretation is found in the observation that it is not uncommon for different understandings of a particular phenomenon to emerge from a single interview transcript (Marton, Dall'Alba & Beaty, 1993). This view in which experience changes kaleidoscopically from moment to moment suggests the capture of fleeting instances of experience rather than more extended aspects of learners' experience.

The Meaning of Phenomenon

A slight deviation is required if this discussion is to be advanced. Inherent in Kroksmark's analysis (Chapter 3, p. 69) of the etymological meaning of the word phenomenography, is a tension between notions of experience and phenomenon, and also, as Richardson (1999) noted, in the idea that phenomenography is able to represent experience as the object of study. The tension may be the result of the fact that phenomenon assumes several interpretations in recent literature (e.g., Marton & Booth, 1997). I will illustrate the tension.

Marton and Booth (1997) describe phenomenon in terms of a distinction between a situation that "is always experienced with a sociospatiotemporal location—a context, a time, and a place" and a phenomenon that "is experienced as abstracted from or transcending such anchorage" (p. 82, italics their emphasis). Note the intention that both situation and phenomenon are experienced. Both aspects are "inextricably intertwined" (p. 82) or internally related one with the
other, and both are necessary if experience is to have meaning. So the iterative movement between situation and phenomenon may be compared to that which exists between first and second order perspectives, or between immediate experience and the objectification of that experience, and between descriptive and explanatory ontology. In this interpretation, experience appears to be given primacy and phenomenon is an inclusive, internally related aspect of experience. Accordingly, this notion of experience has the potential to transcend or otherwise avoid the issues of Cartesian dualism that were mentioned earlier.

However, phenomenon as the object of research is sought and objectified, in practices that suggest a dualist theory of knowledge. For instance, Marton and Booth (1997) state that "in phenomenography individuals are seen as the bearers of different ways of experiencing a phenomenon, and as the bearers of fragments of differing ways of experiencing that phenomenon" (p. 114). So a phenomenon is experienced, but what is described are different ways of experiencing the phenomenon at the collective level. Moreover:

the variation is ... distributed across the group, but to some extent even a single way of experiencing something is distributed. Its different appearances can often have complementary relationships with each other, like having fragments of the same whole spread around (p. 124).

So:

the way in which a person experiences a phenomenon does not constitute the phenomenon itself. It rather constitutes one facet of the phenomenon, seen from that person's perspective, with that person's biography as background. In contrast, when the researcher describes the differing ways of experiencing a phenomenon, the researcher is describing the phenomenon, again, no more than partially, from the reports or inferences of the subjects, and it is this partial constitution of the phenomenon that is the researcher's description (p. 125).

These passages imply that a phenomenon as different ways of experiencing something, is an objectified outcome of the research process. Thus, as Kroksmark suggests, phenomenography represents experience as a distinct phenomenon. Moreover, the Gestalt whole/part metaphor appears to apply only to the level of the phenomenon, and an individual's fragments are the parts that contribute to the larger whole. So unlike the part/whole/part iteration of
hermeneutic understanding, and Gestalt's dynamic inter-active theme and thematic field, this process appears to be more uni-directional.

The two interpretations that are outlined in the passages above appear to be quite distinct. Yet we saw earlier that the iteration between first and second order perspectives involves objectification in experience. In fact each of these examples constitutes an important facet of thinking and experiencing. So is the issue concerned with the way in which the relation between phenomenon and experience is conceived? Further, is it a matter of degree rather than distinction? The issue finds its concrete form in phenomenographic analysis which is dominated by the notion of objectified phenomenon.

Lewis Carroll's Grinning Cat: the Disappearance of Contextual Relevancy

In phenomenographic analysis a focus on different ways means that within an individual's data, similar expressions as "fragments" (Marton & Booth, 1997, p. 124) of understandings are distinguished from others with which they differ within the same temporal/spatial framework. These fragments of understandings are decontextualised from their original framework and reconstituted with other similar expressions into a collective experience or category that is redefined within the context of the whole. Thus the descriptions of the categories, while retaining the "structure and essential meaning of the different ways of experiencing the phenomenon," are stripped of the more qualitative "flavours" of the "worlds of the individuals" (Marton & Booth, 1997, p. 114). The outcome of the research is a set of descriptions that derive from the collective, sample, or group level and in this sense "individual voices are not heard" (Marton & Booth, 1997, p. 114). The relationship between the way of experiencing and the category of description is said to resemble "the relationship between Lewis Carroll's grinning cat and the essential grin that is left when the cat slowly fades from sight" (Marton and Booth, 1997, p. 128).

Thus the experiencer is removed from the experience at the first phase of analysis which is often located at the within-individual level. Using Gurwitsch's (1964) theory of awareness, one interpretation of this is that the theme is detached

5 I note that the individual can be replaced in the equation after the analysis is complete (e.g., Marton et al., 1993).
from its thematic field. Yet Gurwitsch argues that the theme-thematic field structure is "an irreducible and original phenomenon sui generis" (p. 325). Moreover, although the focus on internal relation remains at the level of the constitution of the phenomenon or ways of experiencing, the analytic process subsequently reverts to a first order perspective. More specifically, what at first appears to be a non-dualist view of knowing becomes at the first level of analysis an objective and dualist description of experience. It is this tension that permeates phenomenography. Hazel, Conrad and Martin (1997) agree. They argue that "although phenomenography affirms the centrality of the relational, phenomenographic studies often seem to move 'beyond' the relational too early, cutting the link between the individual's experience and the analysis" (p. 214).

The result is that learners' experiences are not only decontextualised but fragmented. I will deal with decontextualisation first. There has been considerable discussion about the way in which phenomenography is able to account for the context of the learner (Ekeblad & Bond, 1994; Hazel et al., 1994; Hazel, Conrad & Martin, 1997; Säljö, 1994; Uljens, 1993). The debate appears to be grounded in the more general direction that educational research has assumed towards a view of cognition as situated (Brown, Collins & Duguid, 1989) or socially shared (Resnick, Levine & Teasley, 1991). Within these perspectives, the context (say culture or social situation) is understood to frame the meaning that students give to learning. Some of the criticisms suggest that phenomenography fails to capture this meaning or the richness of lived experience (Hazel, Conrad & Martin, 1997; Säljö, 1997; Uljens, 1993). More specifically, criticisms often cite its lack of attention to gendered and affective ways of knowing (Hazel, Conrad & Martin, 1997). Others focus on personal context as very narrowly defined ideas of gender or social class (Hazel et al., 1994).

The Effects of Decontextualisation

Some of these criticisms are grounded in an understanding of phenomenography as research that adopts a first order perspective and that seeks more causally definitive explanations (Ekeblad & Bond, 1994). These arguments often miss the important implications for research that derive from a second order perspective and that focus on internal relations (e.g., Richardson, 1999; Uljens, 1993).
Yet there is a problem about context in traditional phenomenographic analysis. The early separation of the experience from the experiencer not only decontextualises the experience in a physical sense but it is also likely to separate it from the emotional, moral and aesthetic characteristics and values in which it is embedded. In my own data, students associated certain experiences with particular emotions. For example, those who experienced learning in terms of skill and competence also talked of enjoyment and confidence and they valued the experience. Similarly, Marton et al. (1993) observed that learners in the Open University study characterised different experiences in terms of particular kinds of metaphors. Metaphors often comprise the concrete expression of underlying affective and aesthetic aspects of experience. In their study, students' experiences of affective and skill aspects of categories E and F were intimately associated with an organic metaphor. These findings parallel the change of focus to emotional, aesthetic and social characteristics of knowing in the later stages of epistemic beliefs research (c.f., Belenky et al., 1986; Kramer, 1989; Perry, 1970). So these emotional and aesthetic characteristics are integral to the contextual relevancy of the experience. They form part of the thematic field. Yet there is little evidence to show that phenomenographic studies of learning in higher education have taken account of more subjective aspects of learners' experiences (Hazel, Conrad & Martin, 1997).

The phenomenographic process of decontextualisation also allows fragments of experience that were embedded in different sets of intentions and values to be conflated and associated with others that may not be part of the same relevance structure. For example, in qualitative research on approaches to learning, students who understand learning as complex and skilled may well talk of using strategies that appear to be more suitable to a surface approach yet their strategies are likely to be based on different intentions and actualised in a conceptual framework that negates such an approach. This argument about values was first made in relation to quantitative research on approaches to learning (Biggs, 1979) but it is supported by the congruence in values and conceptions of knowledge that is evident in much of the later work on conceptions of learning (e.g., Marton, Dall'Alba & Beaty, 1993).

So, returning to the example of Anna, how can the phenomenographic approach to analysis account for the coherence and contextual relevancy of her within-individual data? I argue that it cannot because Anna would not exist as an
individual in a phenomenographic analysis. Moreover, in fairness, it was never the intent of phenomenography to take account of her experience in this way. The individual has a place only as one of "the bearers of different ways of experiencing a phenomenon" (Marton & Booth, 1997, p. 114) and it is the different ways that are the focus of attention. Yet if an explanatory ontology is to become more informative of experience it must include the richness and contextual relevancy of the individual. This is particularly important if the research focus is longitudinal and the object of research is the development of the individual's experience.

**Internal Relation and Hermeneutic Understanding**

In the following sections I use the idea of hermeneutic understanding to bring together the different and complex threads that have been explored above. In much of the earlier parts of the chapter I emphasised the importance of internal relation. Another look at Gurwitsch's (1964) idea of thematic field sets the scene for the re-introduction of the hermeneutic perspective that I use for analysis. Earlier the thematic field was described in terms of the totality of co-present data that are associated with the theme. The thematic field comprises the context of the experience—what is perceived as relevant in terms of the theme (p. 340) or "the domain of relevancy" (p. 341). Gurwitsch states:

> The relationship is not merely that of simultaneity in phenomenal time, but is founded upon the *material contents* of both the theme and the co-present data. Such a relationship is *intrinsic* since it concerns that experienced together rather than the mere fact of its being experienced together (p. 340, italics his emphasis).

Gurwitsch extends this idea of internal relation to include the notion of unity:

> Items between which such an intrinsic relationship obtains do not merely coexist with each other; they are not merely juxtaposed. A *unity* with its own specific nature prevails between them (p. 341, italics his emphasis).

**The Unity of Experience: the I-You Relationship**

This idea of unity needs extending if I am to clarify my approach to the research described in this thesis. So I pause for a moment to look again at the nature of experience. Here I focus on my own experience of *experience* and ask you as a participant in this process to do the same.
For me, experience is all encompassing, my life as lived experience—me in the world together with others as an interactive whole. I am not aware of fragments of lived experience, rather my experience from moment to moment is a free-flowing whole that it is inclusive of the things around me. Similarly, nor do I understand an other's or others' experiences as a fragment or fragments of some thing. To illustrate this kind of person/world experience I borrow the notion of the I/You relation from Marton Buber (1937/1970). In I and Thou, he expresses the intrinsic nature of the I-You relation—our relation with the other:

When I confront a human being as my You and speak the basic word I-You to him, then he is no thing among things nor does he consist of things. He is no longer He or She, limited by other Hes and Shes, a dot in the world grid of space and time, nor a condition that can be experienced and described, a loose bundle of named qualities. Neighbourless and seamless, he is You and fills the firmament. Not as if there were nothing but he; but everything else lives in his light (Buber, 1937/1970, p. 59, italics his emphasis).

Buber's I-You relation reflects Gadamer's (1989) notion of aesthetic experience as all encompassing dynamic living space where the boundaries merge and become one. In that instance the I-You relation is experienced as an inseparable aspect of the greater whole. Thus in an exploration of Anna's experience I too enter an I-You relationship with her in an internal relation. This kind of unity comprises a structurally related whole in experience and each constituent of that whole co-exists with its correlative part (Gurwitsch, 1964).

**Contextual Relevancy: The Shift From Phenomenon as Object to Phenomenon as Mutually Defined**

Gurwitsch (1964, p. 341) argues that "unity of context is unity by relevancy." Both relevancy and context sit in intrinsic relation to each other and thus influence each other. Yet what is relevant also defines the meaning of the theme. So as the perception of certain relevancies changes so does that of the meaning of the theme. As the perception of the meaning of the theme changes so does the meaning of the relevancy of the thematic field (p. 341). The example of Anna's experience provided a glimpse of this kind of relationship.

This idea of the inseparableness of the parts of experience is extended in Ekeblad's (1996) notion of conception. She explains its constitution in terms of
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an internal relation between subject and object as "mutually modifying terms" (p. 55). She illustrates this idea by reference to the relation between a parent and child where a specific relation exists between one and the other and each of them is characterised in terms of that relation. Changes to one or the other transform the meaning of the relation. The notion of "mutually modifying" resembles the dynamism that is inherent in Piaget's processes of assimilation and accommodation. Yet unlike Piaget, Ekeblad focuses on the relation between subject and object and changes to that relation, rather than the process, or the subject, or object. The crucial point here is that any characterisation of either the act, indirect object or the object outside of the specific relation that is being studied would be a characterisation of something other than that which exists within the relation. Figure 3.4 illustrates this point. Later this aspect of internal relation is picked up again in a discussion of development.

Ontological Knowing and the Knowing Relation

Heidegger's and Gadamer's view of internal relation goes further than Ekeblad's (1996) mutually modifying terms. The idea of internal relation is an integral aspect of their hermeneutic philosophy. Their notion of hermeneutic circle as a spiral, structural relational concept is not only the means by which understanding is achieved (Hoy, 1978), but as a transformative act it becomes understanding in the mutual merging of what is understood and the accompanying act of understanding. In this iterative relation between the act of understanding and understanding itself we see the resurfacing of the to-ing and fro-ing between second and first order perspective that I elaborated earlier. Such mutuality is also entirely congruent with the way in which the relation between approach and outcome was described in the early Swedish research, and the interactivity inherent in Marton and Booth's (1997) object, act and indirect object.

But Gadamer takes the idea of internal relation even further in his view of understanding as a mode of being or knowing relation. A re-examination of Anna's experience in Figure 3.4 provides an illustration. Through our focus on the relation between knower and known our construction of the experience becomes a creative act that moves its meaning beyond that of the original knower. That is, in the process of "being open to the as yet unsaid" (Palmer, 1969, p. 147) our understanding of Anna's experience of learning becomes transformed and we ourselves are changed as a result of the experience. So the internality of the relation stretches beyond that of the knower and the known to others who seek to
understand. This view of internal relatedness shifts the emphasis from objectified phenomenon to a concern with the continuity of part/whole/part relations within experience. In this thesis I adopt this way of knowing as a perspective for the research and the design of the study and the analysis of the data.

Experiences of Learning: A Complex Multi-Dimensional Phenomenal Field?

At this point in the chapter I shift focus from the more theoretical elaboration of the knowing relation, to what contemporary phenomenographic research suggests about the nature of learning in experiences of learning. It is here that I address the fourth set of issues that are concerned with how learners experience learning. What follows sets the scene for an exploration of different notions of the development of experiences of learning.

Since the time of the early Swedish studies, it has been evident that learners' experiences of learning are rich, complex and subtle (e.g., Entwistle & Entwistle, 1991; Entwistle & Marton, 1994; Marton et al., 1993; Säljö, 1979; 1982). Research that adopts a more experiential perspective (i.e., phenomenography and its more quantitative counterparts) appears to have struggled for nearly three decades to account for such complexity—sometimes with a leaning towards oversimplification. In this section I outline some of the influences of these different attempts and the ways in which phenomenographic research currently explains learners' experiences of learning. I question how students experience learning. Is it a uni-dimensional single phenomenon, or does it comprise a multi-dimensional phenomenal field? Interestingly, parallel questions were raised about research on epistemic beliefs. Schommer (1990) challenged the uni-dimensional (or uni-phenomenal) characterisation of epistemic development and suggested that personal epistemology consisted of a complex belief system of five independent dimensions along which learners proceeded asynchronously (Chapter 2, p. 62).

Approaches to Learning: A Useful Metaphor or the Over-Simplification of a Complex Phenomenon?

Research on approaches to learning provides some evidence of attempts to explain the complexity of learning both in terms of a single vertical dimension that occupies the totality of an outcome space, and within that dimension, a further reduction of experiences to a simple, polar dichotomy (e.g., Säljö, 1982).
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For example, despite the complexity that their research suggests, both Säljö (1979, 1982) and Marton et al. (1993) make a distinction between the first three conceptions of learning and the remainder. More specifically, and focusing on processes, Säljö (1979) reduced his conceptions to two distinct "cognitive orientations" characterised as reproductive and reconstructive (Säljö, 1982, p. 182). Subsequently, out of a sample of 90 participants, he selected six exemplars, to characterise students' conceptions of learning and knowledge. In doing so he painted a picture of the rich and complex qualities of individual's experiences. However, he reduced these data to two distinct perspectives: learning as taken-for-granted; and, learning as a thematic phenomenon. Thus, in the first three conceptions of learning, learning is understood as instrumental, unreflective and depersonalised. In contrast, in the last three conceptions learning itself is thematised and becomes the object of reflection (Säljö, 1982). These differences are said to parallel the qualitative distinction between surface-level and deep-level processing (Marton et al., 1993).

The idea of a binary distinction is well supported by research that derived from the use of self-report inventories. At the time of Marton and Säljö's (1976a) qualitative elaboration of approaches to learning, parallel programs (e.g., Biggs, 1978, 1979; Entwistle, Hanley & Hounsell, 1979; Ramsden & Entwistle, 1981) were using quantitative methods to explore the same construct. Together, these studies are recognised as making one of the most important contributions to higher education in the last twenty-five years (Richardson, 1997). Moreover, despite its difference in perspective, the research reinforced earlier distinctions for example: meaningful and senseless learning (Katona, 1940; Wertheimer, 1945); meaningful and rote learning (Ausubel, 1968); generative and reproductive processes (Wittrock, 1974); and transformational and reproductive strategies (Biggs, 1970, 1973, 1976). Thus it is hardly surprising that students' conceptions of or approaches to learning have often been characterised as a simple bi-polar dichotomy. Entwistle (1997) argues that at the time the deep/surface distinction was a "useful simplifying device" (p. 215).

It is evident that students tend to adopt a particular approach in a particular context or a particular time—a fact that supports dimensionality but not necessarily a simple bi-polarity. More recently, categories of description of conceptions of learning have been matched category by category with similar qualitative variation in approaches to learning (e.g., Crawford et al., 1994). My
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own data support these results. So, rather than the adoption of a bi-polar dichotomous view, much of the evidence may equally well be interpreted as a continuum of gradations of variation in experience across a rich and complex dimensional outcome space.

**Dimensions of Learning: A Brief History**

Influences on the dimensional characterisation of a phenomenographic outcome space can be traced back to research of the 1960s and earlier. At the time of the early Swedish studies, psychological research was strongly influenced by the demise of behaviourism and an increasing emphasis on information processing models of cognition. In general, the behavioural and cognitive paradigms relied on causal, linear stimulus–response or input-output frameworks and "narrow filters of perceptual instants" (Still & Costall, 1987, p. 9). However, the transition from one to the other saw a shift in interest from manipulation of the learning environment (in terms of stimuli) to a focus on learning strategies and in particular, remembering and memory. Research on learning was concerned with the development of models of memory that could be characterised in terms of different kinds of store and the transfer of information amongst them (Craik & Lockhart, 1972). The dominant theory of mind was associated with capacity. Likewise, knowledge was conceptualised as that which could be stored and its growth was understood in incremental terms (Brown, Bransford, Ferrara & Campione, 1983). Moreover, amongst the criteria for distinguishing different kinds of store were differences in temporal retention rates (Craik & Lockhart, 1972). Although, inter-individual differences were of interest, the way in which they were distinguished was similarly concerned with a quantitative increase in knowledge or retention. In the early 1970s the cognitive research interest shifted. Learning continued to be understood in terms of retention rates but the focus of research became the encoding operations themselves and rates of retention or forgetting were conceived in terms of levels of processing, that is, as a function of type and depth of encoding (Craik & Lockhart, 1972).

**Conceptions of Dimensions**

Despite the change of focus, the cognitive influence of levels of processing can be seen in the early Swedish studies where a distinction was made between the learners' level of attention and their distribution of attention in research on text reading tasks (Dahlgren, 1975b; Säljö, 1975). Level of attention was used to
describe the amount (Säljö, 1975) or degree of intensity (Dahlgren, 1975b) of attention that learners give to a particular task. Two forms of distribution of attention were distinguished. The horizontal distribution of attention referred to what the learner focused on in a particular text (Säljö, 1975). The vertical distribution of attention was understood as a qualitative variation in the depth of processing (p. 15).

Though now conceptualised differently, the idea of level still lies at the heart of much of the research on experiences of learning. For instance, Marton and Booth (1997) suggest that categories are different ways of experiencing something that reflect "different layers of individual experience" (p. 125, my emphasis). Furthermore, at different times, the possibility of vertical and horizontal variation or dimensionality within a metaphorical outcome space has continued to permeate phenomenographic research (e.g., Marton, Watkins & Tang, 1997). For example, the contents of outcome spaces of various studies have been characterised in terms of horizontal and vertical dimensions (Säljö, 1982); consecutive processes (Entwistle et al., 1979); levels of outcome (e.g., Säljö, 1982); hierarchical variation (e.g., Marton et al., 1993); breadth, depth and structure (Entwistle & Entwistle, 1991); and, depth and temporal dimensions (Marton, Watkins & Tang, 1997). What appears to be hinted at in many of these characterisations is a two dimensional outcome space in which the dimensions transect yet inter-relate with each other. However, with few exceptions (e.g., Marton, Watkins and Tang, 1997), the possibility of a horizontal dimension has tended to be ignored and the vertical (depth) aspects of the outcome space have continued to be emphasised. The vertical dimension is characterised in terms of variation of ways of experiencing and finds its substance as categories of description. Thus, what is implied by most sets of categories is a single vertical dimension that represents the increasing complexity of the phenomenon.

An Alternative View: Learning as a Multi-Dimensional Phenomenal Field

Säljö's (1979) and Marton et al's (1993) studies show that learners understand learning variously as memorising and/or reproducing and/or applying and/or understanding. In research that explores learning as an internally related experience similar variation is seen in experiences of memorising (Marton, Dall'Alba & Tse, 1993; Marton, Watkins & Tang, 1997; Marton Wen & Nagle, 1995; Wen & Marton, 1993), meaning (Dahlin & Regmi, 1997), understanding (Marton, Dall'Alba & Tse, 1993; van Rossum, Deijkers, & Hamer, 1985) and
applying (van Rossum, Deijkers, & Hamer, 1985). Moreover, if we examine qualitative studies that have explored say understanding or knowledge as separate phenomena, they reflect the same pattern of qualitative variation (e.g., Entwistle & Entwistle, 1991; Entwistle & Marton, 1994; Dahlgren & Pramling, 1985). So how can experiences of understanding, for example, be confined to a single category in studies of conceptions of learning, and yet show significant variation in research where it is treated as a separate phenomenon?

The body of research outlined in the previous paragraph, and that associated with conceptions of learning (Marton et al., 1993; Säljö, 1979) suggests that a learner’s experience of learning may be considered as a number of phenomena such as memorising, relating, understanding etc., that form an internally related composite. Thus, a category of description may capture these inter-related ways of seeing at a particular point in time. However, the fact that there are qualitatively different ways of experiencing each phenomenon means that each can be characterised in terms of a vertical dimension, and the inter-relatedness of the dimensions means that they are strongly cross-linked by internal relation. Metaphorically, dimensions may be visualised as threads that inter-weave somewhat analogously to a mixed skein of silks where each colour represents a particular phenomenon. Figure 3.5 provides this framework for thinking about learning as a multi-dimensional phenomenal field.

The inter-relatedness of the meaning and structure of the vertical dimensions at a particular point or transection of the skein constitute a way of seeing, or a category of description. This intersection or phenomenal space captures an individual's experience of the phenomenal field. In Figure 3.5 the phenomenal space is represented as an ovoid that transects the vertical dimensions. Its content constitutes a horizontal space in which the meaning and structure or anatomy of the experience may be captured both descriptively (the experiences of the phenomena in the field) and explanatorily (the what/how of Marton and Booth's (1997) anatomy of awareness). Thus, the phenomenal space includes those aspects of the vertical dimension that transect it at that point—the descriptive aspects of that experience, and the ontological rationale for their internal relatedness—the explanatory aspects of the experience. The totality of the vertical and horizontal dimensions and their relations constitute the phenomenal field. Please note that the dimensions in Figure 3.5 are merely diagrammatic. They are arranged randomly and they represent no particular
structure of experience. The interweaving of the dimensions—the skein—signifies that the dimensions are not merely experienced 'in parallel', but that they are internally related, and the way in which they are internally related is logically coherent in terms of meaning and structure.

**The Nature of the Variation: Hierarchical Subsumption or Morphological Variation**

Given this way of thinking about learning as a phenomenal field, how may the variation be characterised? In phenomenography, variation in ways of experiencing is said to constitute a *hierarchy of categories of description* (Marton & Booth, 1997). Such hierarchical organisation is described variously (e.g., Booth, 1992; Marton & Booth, 1997; Säljö, 1975) yet most descriptions include some form of "implicative model of description" (Säljö, 1975, p. 59) in which level A is a subset or included in level B, which is a subset or included in level C. The relationship need not be entirely transitive, but each category is related to its neighbour. Each category demonstrates increasing complexity and structural organisation, or more complex ways of seeing the phenomenon. For example, Marton et al. (1993) suggest that categories E and F "both integrate conceptions D and E which are hierarchically related to each other" (p. 298).
Thus far, this conceptualisation suggests the subsumption of one experience into another. Yet Marton and Booth (1997) also imply that categories are layers of experience. I referred to possible ways in which experience is constituted in an earlier part of the chapter (p. 107). The notion of implication or subsumption runs counter to Ekeblad's (1996) idea of mutually modifying terms, and the transforming character of Gadamer's hermeneutics. Moreover, in phenomenography, categories represent qualitatively different ways of seeing. Indeed, Säljö (1979) observed that differences in conceptions of learning may be due to differences in the relation between the learner and how they understand the learning material. So it may be more useful to think of categories as differences in structure or shape—a gradual morphing of experiences across the outcome space where the 'inclusion' of earlier forms is one of appearance or resemblance rather than subsumption. With a view to exploring the complexity of this phenomenal field, in the following sections I explore research that may contribute to the vertical dimensions and the notion of a multiple dimensional outcome space.

Possible Dimensions of the Experience of Learning ('Vertical' or Depth Dimensions)

Research on experiences of understanding (e.g., Entwistle & Entwistle, 1991; Wen & Marton, 1993); knowledge objects (Entwistle & Marton, 1994); memorising and understanding (Marton, Dall'Alba & Tse, 1993; Marton, Watkins & Tang, 1997; Wen & Marton, 1993); and conceptions of knowledge (Dahlgren, 1989; Dahlgren & Pramling, 1985) provide support for the idea of separate but related vertical dimensions. This research is explored below.

Forms of Understanding

Recent research on experiences of understanding (e.g., Entwistle & Entwistle, 1991; Wen & Marton, 1993) and knowledge objects (Entwistle & Marton, 1994) provides a picture of a complex and exciting area of knowledge. A sample of 11 students who had completed their degree studies were asked about how they had studied for their final degree examinations and the kinds of understanding they achieved (Entwistle and Entwistle, 1991). In general, understanding was experienced in terms of feelings of satisfaction "that derived from a recognition of the meaning and significance of the material" and "a perception of coherence and connectedness." (Entwistle & Entwistle, 1991, p. 211, their emphasis).
Understanding was conceived dynamically, as a provisional (i.e., changeable) yet irreversible whole. It is associated with the confidence that comes from the ability to explain and the flexible use of knowledge. The study revealed five different experiences of understanding:

- Absorbing facts, details, and procedures related to exams without consideration of structure and reproducing it.
- Accepting and using only knowledge and logical structures provided in the lecture notes and reproducing it.
- Relying mainly on notes to develop summary structures solely to control exam answers.
- Developing structures from strategic reading to represent personal understanding, but also to control exam answers.
- Developing structures from wide reading which relate personal understanding to the nature of the discipline (Entwistle & Entwistle, 1991, p. 213 & 216; Entwistle & Marton, 1994, p. 163).

Another study of 30 Chinese university students, who were asked about the nature of understanding and its role in learning, reported three categories of understanding:

1) Understanding is paraphrasing or retelling content in one's own words.
2) Understanding is stepping into the author's shoes—finding the implicit meaning of something.

Entwistle and Entwistle's (1991) categories show experiences of understanding that range from relatively unstructured reproduction of lecture notes, to reproductive understanding, to transformative acts of understanding that personalise knowledge. Wen and Marton's (1993) categories show similar qualitative variation. Although these studies differed from each other in purpose, and the number of categories that were produced, in each case the categories reflect a similar pattern of cross category (vertical) variation.

Entwistle and Entwistle's (1991) study, was concerned predominantly with the general nature of students' experiences of understanding and revision. However, students' repeated references to visualisation, and parallel research on its role in scientific intuition (Marton, Fensham & Chaiklin, 1994) prompted Entwistle and Marton (1994) to the re-analyse the original data with a focus on visualisation and its relation to understanding. Generally, and as an outcome of revision, understanding depended upon "experienced wholeness" (Entwistle & Marton, 1994, p. 168). Students talked of visualising an entity that had pattern
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and structure (p. 168). Four aspects of the experience of understanding became defining features of a knowledge object. They are:

- a tightly integrated body of knowledge;
- that is quasi-sensory in nature;
- and used to access related knowledge that is not directly figural;
- and, variation in structure from book-knowledge to personal restructuring.

Students experienced "the presence of something" (p. 169) whose "tight integration came from the repeated rehearsal and reconstruction of the material they were learning, and involved both seeking understanding and memorising associated detail" (p. 167). The phrase knowledge object was adopted as a metaphor to capture these features as the "multidimensional and evolving awareness which represents the full experience of understanding" (p. 166).

Students' understanding varied greatly in terms of the extent of the integration and organisation of information, ideas, and experiences and the utilisation of visualisation (Entwistle & Marton, 1994). Entwistle and Marton (1994) used the fourth defining feature, the extent to which students used book-knowledge or personal reconstruction, as an ordering principle to identify four categories that showed increasing integration of:

A. understandings reflecting the contents of specific books and lectures, that comprise condensed summarised material resembling what was provided and showing little personal reflection.

B. understandings reflecting the logical structuring of a field of knowledge, in which revision notes were structured to reflect logical relations and the student (only one) shows evidence of strong quasi-perceptual awareness and is concerned with having a grasp of the field.

C. understandings reflecting a personal restructuring of a field of knowledge, that draws on theory and reflection. Prescribed frameworks are problematised, and developed with attention to possible alternatives that resembles Perry's (1970) relativistic reasoning (Entwistle and Marton, 1994, p. 171).

D. understandings reflecting the phenomena through knowledge restructuring, in which students use both logical relations between parts and general theoretical frameworks. This category is concerned with the construction of "three dimensional images of objects" (p. 172) which students characterised as quasi-sensory experiences and which could be called on at will (p. 170-173).

Note the change in indirect object (e.g., Marton & Booth, 1997) across categories from that of condensed summary, to logical structure, to personal restructuring, to knowledge restructuring. Like other phenomenographic studies,
categories also show increasing structure and organisation from A to D. However, they do not exhibit the kind of implicative or subsumptive relation that was mentioned earlier. Rather they show distinct differences in both meaning and structure, and the defining features, such as experienced wholeness and visualisation of an entity are seen to emerge only in the latter categories which feature personal restructuring (Entwistle and Marton, 1994). Yet the ghosts (as in a structural entity) of a knowledge object exist in the earlier categories. So the inter-category relations can be characterised in terms of both distinct differences and some kind of familiar theme or resemblance. Interestingly, there is evidence (Entwistle and Entwistle, 1991; Marton, Dall'Alba & Tse, 1993) also that the nature of understanding varies in degree from a sudden and dramatic aha to something that develops over time. This idea of two forms of change are looked at later in the chapter in a discussion of development.

**Does Memorising Constitute a Dimension?**

Other research suggests that experiences of memorising may constitute a 'morphed' dimension. Although the Western notion of memorising is perceived to be associated with rote learning (Wen & Marton, 1993), Chinese students distinguish mechanical memorisation from forms of memorising with understanding (Marton, Dall'Alba & Tse, 1993; Marton, Watkins & Tang, 1997; Wen & Marton, 1993). Mechanical memorisation or rote learning involves memorising the material word for word without understanding (Marton, Wen & Nagle, 1995, p. 14). It is considered to be of little use. Meaningful memorising is subdivided into memorising "the original form of learning materials with an understanding" and memorising "the meaning of the learning materials in the learner's own words" (Wen & Marton, 1993, p. 8). Wen and Marton (1993) suggest that the three forms of memorising comprise either a continuum where mechanical memorising is situated at one end and meaningful memorising in one's own words is situated at the other, or a hierarchy where presumably, each form tends to involve more understanding. This idea of continuum or dimension of memorising is set in sharp contrast to the mostly reproductive notions of memorising that are evident in research on conceptions of learning (e.g., Marton et al., 1993; Säljö, 1979, 1982). Note also the distinction between, yet intrinsic relatedness of, memorising and understanding. In mechanical memorising understanding may but does not always occur in conjunction with memorising, whereas in meaningful memorising understanding is a precondition (Wen &
Marton, 1993). Bain (1994) makes a similar observation about memorising for reproductive and for transformative understanding. This research is supportive of the idea of multiple vertical dimensions rather than a single dimension. It also problematises the nature of the association between memorising and understanding and the assumption that they are related as a single bipolar dichotomy.

The Dimensional Aspects of Knowledge

Despite the interest in knowledge objects in the previous sections most phenomenographic studies refer to knowledge only as part of a conception of learning (e.g., Marton, et al., 1993; Säljö, 1979, 1982) or understanding (Entwistle & Marton, 1994). Yet in this research there is some evidence that knowledge may morph from simple to complex forms, in that variation in the meaning and structure of learning is paralleled by similar variation in the meaning and structure of knowledge (e.g., Marton et al., 1993; Säljö, 1979, 1982). Moreover, the same pattern of variation is reflected in the research on epistemic beliefs (eg., King & Kitchener, 1994; Perry, 1970) and in the research on knowledge objects (Entwistle & Entwistle, 1991; Entwistle & Marton, 1994).

Nevertheless, only one phenomenographic study appears to focus directly on students' conceptions of knowledge (Dahlgren, 1989; Dahlgren & Pramling, 1985). It is longitudinal and explores conceptions of knowledge in different professional disciplines (Dahlgren & Pramling, 1985). A total of 70 students, who were equally represented across engineering, business administration, medicine, and psychology, were interviewed at the beginning and the end of their studies. Students' responses to the question: "what do you actually mean by knowledge?" generated three categories:

1. Knowledge is separatistic—knowledge and reality are not linked or understood as separate entities.

2. Knowledge is sequential—there is an explicit relation between knowledge and reality; one's knowledge affects one's function in reality through application: a temporal sequence of knowledge acquisition and action. For example: "it is the ability to find information and then put it into practice, that's knowledge." (Dahlgren & Pramling, 1985, p. 167).

3. Knowledge is integrated—knowledge is not conceptualised separately from reality. It is about reality: "knowledge ... is being able to understand what is happening around one ... learning from one's surroundings how things work and other people's views of things" (p. 167).
In these categories we see a familiar structural sequence from an atomistic view of knowledge to that which is wholistic and integrated. Moreover, the structure and meaning of knowledge inherent in Dahlgren and Pramling's (1985) category A can be linked to a similar conception of knowledge in categories A and B of conceptions of learning (e.g., Marton et al., 1993). Similarly, the structure and meaning of Dahlgren and Pramling's category B may be associated with the conception of knowledge in Learning as applying, while those of category C resemble the more wholistic and integrated view of knowledge in categories D and E of the Open University study (c.f., Marton et al., 1993). Similar links can be made between Dahlgren and Pramling's (1985) conceptions of knowledge with the research on epistemic beliefs (c.f., Baxter Magolda, 1992; King & Kitchener, 1994; Perry, 1970). Moreover, Dahlgren and Pramling's (1985) categories appear to show the same kind of change from dualism to non-dualism that is reminiscent of Perry's (1970) scheme and related research (c.f., Baxter Magolda, 1992; King & Kitchener, 1994). In addition, and despite the fact that these categories focus on the structural aspects of knowledge rather than the processes of knowing, their pattern of organisation resembles Piaget's four kinds of assimilatory activities (in Montangero & Maurice-Naville, 1997), and the ordered recurrent patterns of thinking that are associated with the developmental perspective. Thus the idea of a distinct dimension of knowledge that is interrelated with other aspects of learning is a strong possibility.

A Skill Dimension?

In much of the research outlined above, including Säljö's (1979) and Marton et al's (1993) studies, and the research on epistemic beliefs (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970), the later categories show an increasing awareness of the relative nature of learning and knowledge (Dahlgren, 1989; Dahlgren & Pramling, 1985; Marton et al., 1993; Säljö, 1979). What also is evident in this research is a movement from a dependence on others to a more existential, learner-directed experience. Such changes in experience appear to be related to the development of increasingly complex skills in learning. For example, in Säljö's (1979) category D and in Marton et al's (1993) categories E and F, students' experiences include specific higher order skills such as critical analysis. In Säljö's (1979) Learning as the Abstraction of Meaning learning is an active, constructive activity that involves the selecting, condensing and abstracting of ideas, principles, and procedures to learn and understand (Marton et
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Learning: "is not just a matter of learning facts. It is also to understand, to see contexts and to be able to use knowledge to draw conclusions, to think independently," and "you ... understand it ... you are able to criticise it and suggest alternatives." In the Open University study, the conceptions Learning as seeing something in a different way and Learning as changing as a person, involve transformative experiences, in which there is an orientation towards a generalised skill that is said to resemble Svensson's (1976; 1984) description of skill in learning (Marton et al., 1993).

This idea of skill in learning appears frequently in students' experiences of learning described in this thesis. Yet, with the exception of Svensson (1984) who acknowledges the skill involved in changing from an atomistic to a wholistic approach to learning, there is little recognition given to the fact that even an atomistic approach involves a kind of skill, (albeit limited). Svensson also emphasises the importance of the characteristics of a wholistic approach for the development of skills that involved critical analysis (Chapter 3, p. 79). But he also notes a gradation of meaning within an atomistic approach and within a deep approach.

In summary, the research that I have just explored supports the idea of multi-dimensional field where each dimension comprises a continuum of increasingly complex gradations of experience.

Learning as a Composite of Internally Related Dimensions?

But how are these dimensions related to each other? Cross study comparisons of different phenomena provide evidence that similar patterns of variation exist across different category sets such as understanding (Entwistle & Entwistle, 1991; Entwistle & Marton, 1994), memorising (Marton, Dall'Alba & Tse, 1993; Wen & Marton, 1993) and knowledge (Dahlgren, 1989; Dahlgren & Pramling, 1985). These comparisons suggest that the phenomena exist as distinct entities yet are inter-related in particular ways to form whole experiences that differ from each other across the 'vertical' dimensional space. For example, understanding exists as a phenomenon yet the fact that it is also a precondition for meaningful memorising suggests that there are interrelations between memorising and forms of understanding. Studies in which categories have been treated as internally related aspects of the phenomenon of learning, support this assumption. For example, conceptions of memorisation (Marton Dall'Alba & Tse, 1993; Marton, al., 1993; Säljö, 1979).
Watkins & Tang, 1997; Marton, Wen & Nagle, 1995; Wen & Marton, 1993); meaning (Dahlin & Regmi, 1997), applying and understanding (van Rossum, Deijkers & Hamer, 1985) all relate to research on conceptions of learning. Moreover, these studies show an association between memorisation and understanding (Marton, Dall'Alba & Tse, 1993; Marton, Watkins & Tang, 1997; Marton, Wen & Nagle, 1995; Mugler & Landbeck, 1997; Wen & Marton, 1993); between learning and understanding (Mugler & Landbeck, 1994); and between learning, knowing and understanding (Nagle & Marton, 1993).

Other research (Mugler & Landbeck, 1994; Nagle & Marton, 1993) shows a temporal sequencing in the way in which students relate aspects of learning and understanding. For example, understanding-learning-understanding (Nagle & Marton, 1993), and learning-understanding-learning (Mugler & Landbeck, 1994). Furthermore, Mugler and Landbeck (1994) proposed that a deep approach is achieved through a three stage process in which learning and understanding are associated. Learning is a process of acquiring and broadening knowledge. Understanding is "really knowing a subject, being able to explain it, apply and relate it." Learning, as the result of understanding, involves deep learning (p. 317). The data do suggest that understanding and learning are inextricably intertwined one with the other. However, the fact that this relation between stages was developed from data that derives from separate individuals suggests the need for further verification.

Despite evidence of strong inter-relations, to date no single study has provided evidence of how these different phenomena are associated with each other in a common phenomenal space.

The Notion of a Multiple Dimensional Outcome Space

Thus far, I have argued that research on conceptions of learning, understanding, memorising and knowledge supports the notion that learning comprises multiple vertical but inter-related dimensions. In the main, such dimensions contribute to a descriptive ontology or the descriptive variation of a study.

However, the research on forms of understanding and knowledge objects that was outlined above (Entwistle & Entwistle, 1991; Entwistle & Marton, 1994) provides support for the idea of a multi-dimensional outcome space of a different kind. For example, both the contrasting forms of understanding and the
knowledge objects varied in *breadth, depth* (or level) and *structure*. *Breadth* characterised the range and amount of material that students used to achieve understanding during revision. *Depth* was associated with the amount of personal effort students used to make relations with the material and previous experiences (Entwistle, 1995). Like the relation between outcome and approach to learning, the quality of the form of understanding relates directly to the sophistication of their revision processes and strategies (Entwistle & Entwistle, 1991). The *structure* of the experience varied according to its internal form which ranged from the logical structure that exists in the lecture notes to that which students developed for themselves (Entwistle & Marton, 1994). These characteristics of depth, breadth and structure are suggestive of a more developed explanatory ontology in that they may provide a sense of the *why*—or explanation for the way in which the vertical dimensions are internally related.

### Depth and Temporality: A Two Dimensional Outcome Space

Marton, Watkins and Tang's (1997) two dimensional outcome space provides another example of *structural* dimensions that offer an explanatory framework. Their study of Hong Kong Chinese secondary school students reported four distinct ways of experiencing learning as a whole which are "described in terms of complementary aspects" (p. 29). The distinct ways, that show typical variation from less to more sophisticated, constitute the *depth dimension* of learning of the study. It is shown in the right hand column of Table 3.1. In it, Marton et al. (1997) distinguish between *committing to memory* (words) and *committing to memory* (meaning), and between *understanding meaning* and *understanding the phenomenon*. Furthermore, the depth dimension comprises a "complex of three intertwined aspects: the *subject*, the *act* and the *object* of learning" (Marton, Watkins & Tang, 1997, p. 27, their emphases). The *subject* is concerned with the agency of learning. Here Marton et al. (1997) make a distinction between being taught and doing it oneself. The *act* of learning encompasses the way in which something is learned: the distinction between committing to memory and understanding. The *object* of learning comprises what is learned. In this study it varies from a focus on the words of the text, to the meaning of the text, to the phenomenon.
This characterisation of the outcome space in terms of subject, act and object, and multiple layers of variation, provides a picture of considerable complexity. It also raises some interesting questions about the relation between memorising and understanding. Are they directly linked as a single dimensional attribute or are they separate but interrelated dimensions? The research reported in later chapters of this thesis suggests the latter to be the case. Nor is it clear whether the nature of understanding changes when the term is used to denote understanding the meaning as opposed to understanding the phenomenon. Given that, theoretically, a change in relation between the parts changes the relation of and thus the meaning of the whole these two forms of understanding should differ. This proposition is supported by other studies (e.g., Entwistle & Entwistle 1991; Entwistle & Marton, 1994) and my own data.

The way in which a student focuses on different temporal aspects of the process when talking about learning also reflects variation that can be arranged as a dimension (Marton et al., 1993) the attributes of which "point to different phases of the overall experience of learning" (Marton & Booth, 1997, p. 42). The temporal dimension consists of three distinct facets: "You learn something—it stays—you use it" (Marton et al., 1993, p. 285). Accordingly, the dimension

### Table 3.1: The Depth Dimension (Marton, Watkins & Tang, 1997, p. 30)

<table>
<thead>
<tr>
<th>Subject aspect</th>
<th>Act aspect</th>
<th>Object aspect</th>
<th>Learning as a whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>being taught</td>
<td>committing to memory</td>
<td>the meaning of the text</td>
<td>committing to memory (meaning)</td>
</tr>
<tr>
<td>something you do yourself</td>
<td>understanding</td>
<td></td>
<td>understanding (meaning)</td>
</tr>
<tr>
<td>the phenomenon</td>
<td></td>
<td></td>
<td>understanding (phenomenon)</td>
</tr>
</tbody>
</table>
comprises an "acquisition" phase in which knowledge is acquired or absorbed; a phase of knowing in which the learner possesses or stores up knowledge; and a phase of making use of, applying, or exploiting the knowledge" (Marton & Booth, 1997, p. 41). There is also a hint of this kind temporality in Säljö's (1979, p. 12/13) study: "you learn something in order to know, for the future" and "you learn things to know later on" (Marton et al., 1993). The temporal facets are shown in Table 3.2.

Table 3.2: Location of Conceptions of Learning in a Two Dimensional Outcome Space (Source: Marton et al., 1997, p. 42; Dahlin & Regmi, 1997, p. 474).

<table>
<thead>
<tr>
<th>Depth Dimension</th>
<th>Temporal Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on the signs</td>
<td>Acquiring</td>
</tr>
<tr>
<td>Focus on the signified</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>Increasing one's knowledge</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>E</td>
</tr>
</tbody>
</table>

Using the idea of temporal dimension, Marton et al. (1993) mapped different categories as experiences of learning on to different locations in an outcome space (see Table 3.2). Categories B and D were located in the acquiring phase, A and F with the knowing phase, and C and E fit the making use of phase (Marton, Watkins & Tang, 1997, p. 41; see also Dahlin & Regmi, 1997, p. 474). Given Marton and Booth's (1997) notion of layers of experience (p. 39) and the fact that some categories are located in both the acquiring and applying poles (e.g., Dahlin and Regmi, 1997; Marton et al., 1993), the idea of locating qualitatively different experiences on a single temporal dimension may represent an oversimplification of the relationship. Indeed, Marton et al's (1997) interpretation of the location of the Open University categories changed over time and they note the need for further clarification.

Marton et al. (1997) combined the depth and temporal dimensions to provide a more comprehensive elaboration of the temporal dimension. In Table 3.3, a particular category is located to a specific level. In this two dimensional
elaboration of an outcome space, learning involves a gradual change from a focus on words to that of phenomenon. There is also an accompanying change in skill from reproducing words to making relations.

Table 3.3: The Temporal and Depth Dimensions of an Outcome Space

<table>
<thead>
<tr>
<th>Way of experiencing</th>
<th>acquiring</th>
<th>knowing</th>
<th>making use of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committing to memory (words)</td>
<td>memorising (words)</td>
<td>Remembering (words)</td>
<td>Reproducing (words)</td>
</tr>
<tr>
<td>Committing to memory (meaning)</td>
<td>Memorising (meaning)</td>
<td>Remembering (meaning)</td>
<td>Reproducing (meaning)</td>
</tr>
<tr>
<td>Understanding (meaning)</td>
<td>Gaining understanding (meaning)</td>
<td>Having understanding (meaning)</td>
<td>Being able to do something</td>
</tr>
<tr>
<td>Understanding (phenomenon)</td>
<td>Gaining understanding (phenomenon)</td>
<td>Having understanding (phenomenon)</td>
<td>Relating</td>
</tr>
</tbody>
</table>

Extending the Idea of a Two Dimensional Outcome Space

The notion of a two or three dimensional outcome space such as that of depth and temporality (Marton, Watkins & Tang, 1997), and depth, breadth and structure (Entwistle & Entwistle, 1991; Entwistle & Marton, 1994) provides quite different information about the meaning of experiences of learning than the vertical dimensions that I described earlier. This kind of structural dimension makes a contribution to ontological explanation. Yet, like the premature focus on causal relations in inventory research and its subsequent effects, we see here a focus on the functional relations between memorising and understanding (Marton et al., 1997) without an elaboration of the meaning of the component parts of the relation. When the meaning of the parts is described it becomes associated with the actual task, such as what is remembered, rather than the ontological meaning of the phenomenon as a whole. To use an analogy from phenomenography, to learn requires an object of learning. To explore relations requires knowledge of what it is that is related as well as the nature of the relation.
Chapter 3: Experiences of Learning and Their Development

An analytical review of the meaning of and relationship between memorising and understanding suggests that in reproductive understanding, repetition assumes a strengthening rather than consolidating role and understanding is appropriated by memorising (Bain, 1994, p. 9). On the other hand, the kind of memorising that is associated with transformative understanding is qualitatively different and is yet to be properly researched (p. 10). Bain argues that memorising and understanding are bound up in an intimate and evolving relationship in which the act of memorising changes as that of understanding unfolds. So here we see a complex interaction between structural and referential aspects of experience working together in an exciting dynamic relationship.

In summary the foregoing analysis suggests that to extend the domain of ontological explanation we must focus on the ontological meaning of the phenomena involved in learning and their qualitative variation (a possible vertical axis); and also take account of the internal structural relations of that variation (a possible horizontal space).

The Development of Experiences of Learning

The remaining part of this chapter focuses on the fifth set of issues that I outlined earlier. They are concerned with change and development of experiences of learning. There are very few studies that adopt a second order perspective to track changes in students' experiences of learning over significant time. Those that do reveal problems with the specificity of the design, the longevity of the study, or the attrition of the sample. Marton et al's (1993) study of students' experiences of learning at the Open University in the U.K., provides exciting glimpses of the potential of an explanatory ontology. Yet its quality was affected by a number of factors. For instance, the subset of data used for analysis comprised students' responses to one question, and subsequent probing, because the overall study was designed for another purpose. So despite the fact that the data were generated from seven interviews that took place over a six year period, they were considerably limited in scope. This issue is conflated by the attrition of the sample. The initial sample of 29 students was reduced to 3 students by the sixth interview.

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6 I wish to express my thanks to Ference Marton for his willingness to share these data with me.
In Dahlgren and Pramling's (1985) longitudinal study of learners' conceptions of knowledge, students were interviewed at the beginning and the end of their undergraduate studies so the gap between interviews may have been overly long. Moreover, this study was designed to explore the effects of higher education rather than the development of students' experiences. Thus the lack of longitudinal research from a second order perspective means that little is known about the development of collective experiences (i.e., the object of phenomenographic research) and even less about individual change and development over a period of time.

In the following sections I look at the different ways in which such development is accounted for (including phenomenography). I draw on the phenomenographic notion of learning as change, and Gadamer's (1989) notion of the hermeneutic circle as a spiral of development of understanding to explore a way of looking at the development of a learner's experiences of learning within the framework of a multi-dimensional phenomenal field.

Conceptions of Development

In the last three chapters the development of knowing and learning has been described in terms of hard stages (King & Kitchener, 1994), soft stages (Baxter Magolda, 1992), and dimensions (Schommer, 1994). It has been alluded to analogously in terms of transformations (Gadamer, 1989), and hinted at in a multi-dimensional outcome space (Marton et al., 1997). The variation that is evident in these perspectives ranges from different interpretations or notions of development itself, to differences in emphasis that exist within a perspective.

A Cartesian View of Development

Hard stage theory (e.g., Fischer, 1980; King & Kitchener, 1994) tends to adopt a static, immutable and invariant view of change that is associated with a Piagetian view of knowledge development. The softer stages of Perry (1970) and Baxter Magolda (1992) suggest sequential, cumulative change, yet they continue to yield and emphasise what might be called stereotypical positions or levels. Despite interest in the individual in context (e.g., Perry's (1970) focus on the college years), they tend to emphasise development itself, whilst ignoring aspects like the individual and contextual relevancy. These perspectives represent more static conceptions of development that are based on the Cartesian tradition: a notion that
has its roots in Platonic views of knowledge which construct universals as eternal and unchangeable essences (Marková, 1987). They are firmly embedded in research that adopts a first order view of the world.

**An Adult Lifespan Development Perspective**

Another view of development focuses on the dimensional aspects of knowing and learning. It provides the possibility for development to be characterised more flexibly. Yet it too, has the potential to develop into a static Cartesian universal model. A look at the more dynamic and contextual approaches that exist within adult lifespan development provides a particular illustration. For some time, these perspectives have emphasised both the multidimensional nature of constructs and the independent and interrelated characteristics of dimensions (e.g., Baltes, Dittmann-Kohli & Dixon, 1984). Unlike hard and soft stage models, these approaches also allow for multi-directionality and purport to take account of the role of experience (Dixon, 1992). Yet, despite such emphasis on individual difference, these approaches resemble their more rigid counterparts in their search for first order causal explanations. They all seek to account for development rather than focus on the nature of peoples' experiences of development and change. They look for universal principles of development rather than an ontological understanding of the meaning of the construct itself. Nevertheless, universals are an inevitable outcome of transformative thinking. We construct our reality in experience. So what is important in this discussion is not the notion of a universal but the kind of universal (Marková, 1987) that is embedded in the design and philosophical underpinnings of the research.

**A Phenomenographic View of Development**

In contrast, from a phenomenographic second order perspective change or development is understood in terms of learning itself. *Gaining and developing* knowledge about the world through experience are perceived to be analogous (Marton & Booth, 1997, p. 6). "Learning takes place, knowledge is born, by a change in something in the world as experienced by the person" (p. 139). "We posit this relationship and study how it changes as time passes" (p. 139). Thus, to have learned implies that there has been a change from experiencing something predominantly as conception (or category) X to experiencing something as conception (or category) Y (e.g., Marton, Dall'Alba & Beaty, 1993).
However, this focus on change and variation or the qualitatively different ways of experiencing a phenomenon introduces another issue. According to Marton and Booth (1997) the notion of "qualitatively different ways" involves the capture of the critical aspects of difference in which meaning and structure of a phenomenon are experienced (p. 139). So development as a change in experience is analogous to change from say, conception A to B where what is experienced is qualitatively different: something akin to the dramatic aha that Entwistle and Entwistle (1991) described in relation to understanding. From a cognitive perspective this kind of change is reflected in learning as conceptual change, and from Piagetian theory it is the outcome of the process of accommodation. So traditionally variation is an appropriate focus if the object of research is a change in experience. Yet, research from a second order perspective on conceptions of learning suggests that only a proportion of learners experience learning as a transformative experience. Marton and Booth agree that "most learning is not of this kind" but involves the development "of more detailed knowledge of" the phenomenon and "more advanced mastery of "the skills that we have already experienced in a certain way" (p. 139): a kind of learning that is more akin to Piaget's assimilative processes (Chapter 2, p. 56). Thus learners' experiences of learning include both a change in relation between individual and phenomenon, and within that relation, experience of its further development. Yet traditional phenomenography focuses upon the change in relation.

So what kind of understanding of change and development could a phenomenographic study provide? The repeated replication of Säljö's (1979) conceptions of learning, suggests that individual change and development might be described within a common outcome space at different points in time (e.g., Marton et al., 1993). However, the analyses of both cross sectional and longitudinal studies involves the pooling of both within-individual and cross-individual data. The decontextualisation that occurs raises all the issues that were alluded to in an earlier part of the chapter.

A Focus on Thematic Aspects of Learning

In research that extended Marton et al's (1993) study of conceptions of learning Beaty, Dall 'Alba, & Marton (1998) focused on both change and development. Using a case study method, they tracked the experiences of the six students in the Open University study (e.g., Beaty, 1987; Gibbs, Morgan & Taylor, 1984) who were interviewed on five or six occasions. Unlike the phenomenographic focus
on the collective experience, this approach was concerned with within-individual changes in experience across a period of time. Thus it represents a significant departure from other phenomenographic research both epistemologically and methodologically.

Beaty et al. (1998) found persistent threads of particular themes in students' conceptions of learning. There was also a consistent link between three aspects of learning that changed over time: feelings of growth in confidence in what students felt they were able to do; competence in their approaches to study; and, control over their own study patterns. Overall, there was a pattern of increasing autonomy in the way they went about studying. Individual cases of four female students were used to illustrate change over time, for example: the way in which disciplinary knowledge becomes integrated into every day reality; personal growth and its relation with life; the development of skill and capability. Beaty et al. emphasise that individually characteristic themes underlie the variation. Thus over a longitudinal study, students tend to focus consistently on certain aspects of their experience. Moreover their focus within their experience of learning may be related to their rationale for study and their more general life interests.

Changes and Development of Experiences of Learning: A New Focus?

The substance of the last two sections suggests that research that extends our knowledge of both change and development must have as its object a focus on both variation and more gradual accumulation. Yet, in current phenomenographic practices, experiences of learning as gradual accumulations cannot be accounted for because the continuity of the individual is lost at the within-individual level early in the analysis. So what appears to be required as a basic unit of analysis is a shift from a focus on fragments of individual's experiences to that which is inclusive of an individual's whole experience within the socio-temporal-spatial frame of the interview. Thus analysis of the data of the research reported in this thesis will focus on the similarities and differences between whole interview transcripts, and categories will be uniquely tied to the overall experiences of individuals. Beaty et al's (1998) findings of individual recurrent themes in the longitudinal case studies provides additional support for this approach.
**Drawing the Threads**

Three main threads weave through the first part of this chapter. They are the relation between knower and what is to be known, the nature of the knowing relation and how the individual is recognised in the knowing relation. All three are intimately related to each other. I have argued that the elevation of these three in research depends on the adoption of a theory of knowledge that transcends the dualist/non-dualist distinction. I suggest that both the relation between knower and known, and that between the researcher, and knower and known involves an awareness of the iterative movement between both first and second order perspectives (or situation and phenomenon). I emphasise not only the primacy of internal relations but also the elaboration of ways in which such relations become evident in the knowing relation. I argue also for a knowing relation that focuses on hermeneutic understanding—that is, a knowing that is mutually inclusive of the individual and phenomenon in the research situation and is able to account for the transformative nature of that relationship.

The second part of the chapter includes a review of current research on students' experiences of learning. In summary, there is a lack of research that adopts a second order perspective that focuses on the development of learners' experiences of learning. Most studies have conceptualised learners' experiences in terms of a unidimensional outcome space yet there is evidence to support the notion of an interrelated, multidimensional phenomenal field. Despite recognition of the significance of the structural aspects of experience, there is a lack of research that provides an ontological description and explanation of such a field. Yet it is not possible to reveal the unity of the part/whole/part relation involved in such explanation if the approach to research fails also to acknowledge the wholeness of the individual's experience. Moreover, most research that adopts a second order perspective conceives of learning in terms of qualitative change yet there is also a need for a focus on the accumulative development of knowledge and skills.

Accordingly, this research is concerned with a dedicated, longitudinal study that is able to provide an ontological description and explanation of the development of learners' experiences of learning in terms of a multi-dimensional phenomenal field. Gadamer's (1989) conceptualisation of understanding as transformation provides a view of change and development that is a dynamic,
evolving spiral of increasing complexity and change. Moreover, my data suggest that this idea of a transformative spiral resembles learners' own experiences of change and development. As an approach it is able to take account of the depth, breadth and structure of experiences of learning as a holistic continuum of change and development rather than change or development.
CHAPTER 4
APPROACH TO THE RESEARCH

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The final criterion for the validity of the research is the clarity of insight of the phenomenon's essence, for the insight is self-validating (Polkinghorne, 1983, p. 45).

Introduction

Much of the substance of the last three chapters focused on ontological ways of knowing. In those chapters, I tried to emphasise that ontological knowing is not a problem of method (Gadamer, 1989; Kvale, 1996; Salner, 1989) but of making meaning through understanding. This chapter addresses the management of this task. Throughout the practical description I interweave discussion of themes that are concerned with the truth values of the research. I address such questions as:

- How do I know?
- Why should you accept my interpretations?
- Is what is presented here authentic in the wider communicative context of educational research?

and

- What are the criteria for judging that this is the case?

Truth Values and Defensible Knowledge

Gadamer (1989) argues that ontological understanding is concerned with gaining insight, knowledge and truth. He reinforces his point with a question, "but what kind of insight and what kind of truth?" (p. xi). In the past, questions of truth were typically concerned with the validity of the outcomes of the research that derived from first order research: do the results represent the prescribed object of study and can they be generalised? However, concepts of validity in the social sciences derive from questions about the nature of knowledge and its communicative context and as these entities shift and change so do notions of truth (Kvale, 1989). Thus truthfulness is embedded in the nature and meaning of the activity. In earlier chapters I described a perspective that attempts to transcend dualist dichotomies with a notion of knowledge that is socially constituted between or amongst knowers and known. In Chapter 2 (p.65), I distinguished between epistemological and epistemic conversations (see Polkinghorne, 1989, p. 38). From a post-modern or post-Enlightenment perspective an epistemic conversation focuses on the human being as knower and assumes confidence in knowing.
Experiences of knowing, particularly affective aspects, are expressed in a variety of aesthetic forms (Polkinghorne, 1989) such as metaphors, stories, and poetry. Like Gadamer's (1989) philosophical hermeneutics, Polkinghorne's epistemic conversation emphasises an "ontological view which holds that the aesthetic mode is not merely play but can be a disclosure of truth" (Polkinghorne, 1989, p. 41, italics his emphasis). Similarly, Polkinghorne (1989) argues research goals should "include those that undergird human wisdom as well as those that supply technical expertise" (Polkinghorne, 1989, p. 39). This association of wisdom with truthfulness reinforces the concern with the idea of knower and confidence in knowing. It also introduces a notion of validity as reasonableness (e.g., Polkinghorne, 1983; Salner, 1989). However, what is reasonable in one context is not necessarily so in another, thus to use reasonableness as a criterion for validity requires that it be embedded in a particular context, culture and language. The locus of this experience must be transactive (Eisner, 1991). It is achieved through continuous dialogue and interaction, with a focus on a variety of sources of communication such as narrative and metaphor. I tried to write the thesis from this perspective. In terms of this view of knowledge, it situates questions of value and truthfulness centrally in issues of the quality of the dialogue and interaction, not as a static instance in time but as an ongoing event.

In the case of this thesis, the focus of the transaction is the ontological meaning of experiences of learning. Such knowledge is not certain but it is defensible (e.g., Kvale, 1989; Salner, 1989) and the task is to make it believable (Eisner, 1991). The notion of defensible knowledge implies the need for an interactive, communicative context which supports different forms of argument. Thus, rather than a focus on outcomes, truthfulness lies in the quality of the discourse of the whole thesis—the extent to which the approach (including the perspective in which the research is located) reflects the meaning of learning as a phenomenal field. This kind of validity is concerned with its narrative coherence and affective power (Salner, 1989); its overall authenticity (Silverman, 1993); its ability to persuade (Berliner, in Salomon, 1991); and the credibility of the argument that supports or defends its knowledge claims (Hammersley, 1990, in Silverman, 1993; Polkinghorne, 1983).

These characteristics call for a notion of validity as communicative honesty (Eisner, 1991) and the quality of craftsmanship (Kvale, 1996). They are concerned with the discursive practices of the study—its scholarship and its ability to

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communicate that scholarship (Eisner, 1993). Given that experience, as knowledge, is socially constituted, language as discourse "is constitutive of that social reality" (Kvale, 1989, p. 76). Communicative honesty requires that the research processes are transparent and open to view. Craftsmanship involves a process of continuous verification: checking, questioning and theorising (Kvale, 1996, p. 241). With these characteristics in mind, I outline the research situation and my own role in that situation. I describe the design of the study; sampling processes and a profile of the participants; the nature of the interviews and subsequent procedures; the quality of the data that were generated and their analyses; and the strategies to ensure the veracity of those analyses. Finally, I provide an outline of the way in which the results are presented in subsequent chapters.

**The Research Situation**

The study draws samples of undergraduate students from the psychology departments of two Australian universities that are subsequently referred to as University A and University B. During the conduct of the study, Australian higher education underwent considerable restructuring. For example, University A tripled in size and University B increased its intake of students by approximately 50%. However, the participants in the study were selected before many of these changes took place and from areas which were not initially affected by them. Moreover, despite the overall size of these changes they appear not to have had a direct effect on those who participated in this study. In what follows, I outline the similarities and differences between the two institutions, the contexts of the two programs from which the participants were drawn, and my role in the research situation.

**The Institutional Contexts**

The Universities differed from each other in terms of size, age and the way in which they were perceived more generally. University A, was established in the early 1970s. In 1990 it was a small institution with a student enrolment of just under 5000 and an academic staff of approximately 600. In contrast, University B, the oldest and largest university in the State, was established at the beginning of the century. In 1990, it had a student enrolment of 18,000 students and academic staff of 1300. If given a choice students tended to opt for University B because of its perceived status and its strong and well established record of scholarship.
Organisational differences were also apparent. From its inception, University A differed from more traditional academic institutions in its academic, organisational and social aspects. Locally, it was perceived as the green or liberal university. In contrast, University B was seen as a more traditional and formal academic institution. At the commencement of the study, the structure of University A was relatively flat comprising four Divisions each of which evolved in association with a particular program of study. University B was organised more hierarchically and consisted of 13 faculties, and 62 academic departments.

The Psychology Programs

These differences in size and organisational structure were reflected at the program level. This research focuses on students' experiences of learning in psychology degree programs. The Bachelor of Behavioural Science at University A was a new degree that was established in 1990. At the time, it was designed as a dedicated professional program for students who intended to take up a career in either organisational or counselling psychology. Its first intake consisted of a total of 120 students. In contrast, at University B specialisations in psychology were offered through a Bachelor of Arts, a Bachelor of Science, and a Bachelor of Commerce and Economics. Unlike University A, first year subjects at University B were service courses. That is, students who enrolled in psychology subjects may have been majoring in another discipline or profession such as physiotherapy or social work where the curricula required them to take undertake first year psychology courses. This emphasis is reflected in the fact that in 1990, a total of 3,071 students enrolled in first year psychology subjects at University B.

The curricula in psychology at both universities were governed by the stringent professional requirements of the Australian Psychological Association. Thus, those students who intended to practice as psychologists under the auspices of the Australian Psychological Association, were expected to complete a fairly full program of subjects that focused on psychology. However, the two programs were organised differently, and taught very differently. Both programs included a compulsory core. However, at University A, a degree was understood as an organised whole in which each subject comprised an integrated part, whereas at University B the focus tended to be at the subject level. At University A the program focused on contemporary problems in behavioural science. The curriculum aimed to develop an understanding of human behaviour with a focus on the development of skills needed to manage change for individuals, groups,
organisations and communities. At University B the aim was to develop a generalist background by a broad coverage of substantive areas and methodological skills.

At University A, teaching involved experiential approaches that emphasised interaction and engagement. Discussion was encouraged even in the lecture situation, and other teaching consisted of small groups, peer teaching, workshops, and visits to community agencies. Assessment comprised a mixture of internal assessment including project work and examinations some of which were take home and open book. At University B teaching focused on delivery. In first year it consisted only of large lectures and assessment was by mid-term short answer or multiple choice test, and end of term examination. Second and third year teaching involved lectures, laboratory and tutorial based teaching.

My Role in the Research Situation

I was employed as an academic in the academic development unit of University A. I was also a member of the program committee that had overall responsibility for the planning and delivery of the new Behavioural Science program at University A. During the years of the study I was personally responsible to the program committee for the ongoing evaluation of all of the subjects in the program. In consequence I became very familiar with this degree program and I was known personally to most of the students who were enrolled in the program. In contrast, at the beginning of the study, I had little knowledge of the psychology program at University B and I was not known to any of its students. It will be evident from earlier description that the two institutions were culturally different. They also adopted different languages to describe their academic programs and different practices for their administrative processes. Given the emphasis on dialogue and interaction in this study these differences in my knowledge of and involvement in the two programs are significant. The differences required me to be aware that my familiarity with the students and context of University A and my ignorance of those associated with University B might lead me at times to be culturally insensitive and/or to neglect important aspects of students' experiences. Specifically, the differences introduced issues associated with access to students, sampling processes and outcomes, and the interpretation of data.
Overall Parameters of the Study

In the following sections I describe the overall parameters of the research which include the background and specific foci of the research questions, the structure of the study, and the design of the interview schedule. At this general level, the validity of the overall study depends upon "the soundness of ... [its] theoretical presuppositions ... and on the logic of the derivations from theory to the research questions of the study" (Kvale, 1996). Moreover, Salomon (1991) suggests that the overall quality and the ability to address issues of generalisation provide additional challenges for qualitative studies. These aspects of the research are addressed below.

Earlier in the chapter I referred to validity as communicative honesty. Kvale (1989) defines communicative honesty in terms of a coherence view of knowledge, one that comprises a harmonious relation involving "unity, consistency and internal logic" (p. 75). These three characteristics are discussed in relevant parts of the chapter. However, in the design of the research, I focused on its overall structural coherence with a particular emphasis on unity—the way in which different parts of the research hold together in their focus on the phenomenon (Kvale, 1989). At the same time the design and procedures had to respond to the emerging situation (e.g., Lincoln & Guba, 1985). So what was required was a framework that allowed both structural unity and the ability to respond to new phenomena.

Coherence as unity requires "an awareness of the historical and temporal context of the knowledge development" (Polkinghorne, 1989, p. 39). Thus, it seemed important to identify an underlying theory of knowledge that could guide the practical enactment of the research. In the first instance, phenomenography (Marton, 1981) was chosen as an approach. However, as the study evolved it became evident that it would be necessary to adopt a slightly wider focus. Moreover, any elaboration of the perspective that I adopted needed to include the possible consequences of such an adoption (Polkinghorne, 1989), and locate the research both historically and contemporarily. In previous chapters, I provided the history and philosophical justification for the position that I finally adopted and its location in contemporary research. Gadamer's (1989) hermeneutic philosophy provided an excellent theoretical base in that its concern with ontology mirrored the interest of the study and complemented phenomenography (and particularly phenomenography's more recent interest in the structure of experience). Despite
appearances to the contrary, the process of developing the theoretical position was far from linear. Unlike Lincoln and Guba's (1985) concept of an emergent design that evolves primarily as a result of induction at the level of data collection and analysis, this study developed as an iteration between an emerging epistemology and its relation to emerging practices. Thus the design of the study derives from but also contributed to the philosophical position.

Gadamer (1989) argues that truthfulness should not only be justified philosophically, but should itself be a *mode* of philosophising (p. xxiii). For me this suggested that the hermeneutic idea of knowledge as transformative must be enacted in the mode of reasoning of the research itself in both its design and implementation. In addition, the idea of historical context implies continuity with what has gone before. Yet, from a post-Enlightenment perspective, the epistemic conversation also gives primacy to temporality in terms of the transient and morphing nature of knowledge. By accommodating both continuity and change in the research design, my requirements for both a guiding framework and flexibility were met. Moreover, Gadamer's (1989) notion of the hermeneutic circle as a transformative spiral of understanding was reinforced. As an aside, this recognition of temporality was emphasised in Chapter 3 in the need for research on both the gradual development of, and accommodative change in, experiences of learning.

Furthermore, the idea of ontological transformation suggests a reconstruction of more traditional notions of the utility and generalisability of the research. As a way of thinking, it responds to Kvale's (1989) notion of instrumental validity and Eisner's (1993) argument that the experience of research should employ our minds, or that it should "develop explanatory concepts ... that will help people use their heads" (Cronbach, 1975, p. 126, my emphasis). Thus, the emphasis on ontological explanation serves much more than the immediate aim of understanding. Specifically, along with communicative honesty that was an earlier focus of attention, it facilitates the generalisation of the results of the study at a different level. Traditionally, the outcomes of qualitative research are applicable given similar circumstances. A focus on explanatory ontology provides a further set of criteria for judging such applicability.
The Research Questions

The research questions of this study built on the literature that was reviewed in Chapters 1, and particularly, 2 and 3. So, primarily, the study aimed to investigate the nature of students' experiences of learning and the development of, and accommodative changes in those experiences over time by addressing the following questions:

- What are undergraduate psychology students' experiences of learning, knowing and understanding?
- How do these experiences develop or change during the course of their undergraduate studies?
- How is phenomenography able to respond to these questions and what more is required?

There were two main reasons for a particular interest in psychology as the knowledge context for the study. The first reason was entirely pragmatic. I had easy access to a sample of undergraduate students in University A who were studying psychology. The second reason was associated with learning. As a knowledge area, learning is itself an integral part of the psychology curriculum and students who study psychology learn about how people learn. So I assumed that students of psychology could talk about learning and in particular, their own experiences of learning. The third question became figural with the recognition that there was a lack of phenomenographic research that focused on students' experiences over time.

The Structure of the Study

Typically, in studies of adult development, changes are traced through the use of either cross-sectional or longitudinal designs, or a mixture of the two (Horn & Hofer, 1992). Cross-sectional studies of adult development observe samples of individuals of different ages, whereas, longitudinal research comprises an extension of case study methods where a number of individuals are observed repeatedly over time. These studies tend to adopt a first order perspective where the nature of the development is assumed so in the main they are concerned with causal attribution that is linked with variables like age or ability. Most of the research on the development of epistemic beliefs reviewed in Chapter 2, is longitudinal in design yet it too is more concerned with causality than with the ontological meaning of what is developing. Cross-sectional and longitudinal studies each reveal kinds of
knowledge that differ significantly from the other. Cross-sectional studies are synchronic (Montangero & Maurice-Naville, 1997, p. 25). They are able to capture the whole/part structuralism that is evident in here and now relations. However, using this approach only typical change is revealed, and at best, it can only be inferred. Most phenomenographic studies are of this kind. However, it is only the longitudinal or diachronic method that is able to trace within-individual changes in lived experience over time (p. 25).

In general, the review of research in Chapters 2 and 3 pointed to the need for a longitudinal study which, through individual interview, was able to capture more than one instance of a learner's experience over time, yet provide sufficient time for development and change to occur. Several research programs provide a general template for such a focus on development and change (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Marton et al., 1993; Perry, 1970). Accordingly, this study was designed, like that of Perry's and Marton et al's, to capture students' experiences on consecutive occasions during the three years of their undergraduate degree program. The design of the study is shown in Table 4.1.

Table 4.1: Design of the Study

<table>
<thead>
<tr>
<th>Sample</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>Interview 1</td>
<td>Interview 2</td>
<td>Interview 3</td>
</tr>
<tr>
<td>University B</td>
<td>Interview 1</td>
<td>Interview 2</td>
<td>Interview 3</td>
</tr>
</tbody>
</table>

The focus on research of the second order perspective (e.g., Chapter 3) suggested the individual qualitative interview as the method most likely to allow the hermeneutic elaboration of lived experience. Initially, samples from two different universities were used because they enabled longitudinal variation of students' experiences to be explored in two different settings. If there were significant contextual effects on development then these would become apparent. However, as an example of emergent design (e.g., Lincoln & Guba, 1985) an examination of the data generated from the first set of interviews suggested that a more interesting contribution to knowledge could be made by concentrating on the meaning and structure of the experiences themselves. Though some contextual effects are apparent they are not the main focus of the research reported in this thesis.
The Timing of the Interviews

The interviews were spaced at yearly intervals from 1991 to 1993. In Australia the two semester academic year stretches from February to November. Semester two examinations usually take up much of November. Students' first and second interviews took place in late September and early October of the first two years of students' enrolment in the programs. This timeline allowed students to experience almost a whole year of study without complicating the interviews with distracting examination requirements. The third interview occurred in August of the third year of their study because I was on study leave and wanted to make most use of the time available to me.

The Interview Schedule: Design and Rationales

Another aspect of communicative validity, is the notion of consistency. At its broadest level, consistency is associated with the alignment or mutual interdependence of each part or stage of the research at both theoretical and practical levels (Kvale, 1989). In terms of the interview schedule, consistency was concerned with the way in which it captured students' experiences as a whole, and allowed a hermeneutic analysis of that experience. This notion of coherence relates to the congruence or goodness of fit of the outcomes of these two tasks and their relation with the research questions. Criteria for consistency relate predominantly to meaning (Eisner, 1991). The study was to focus on learners' experiences or how they make meaning. Eisner (1993) believes that "experience is the bedrock upon which meaning is constructed" and to a significant degree such experience "depends on our ability to get in touch with the qualitative world we inhabit" (p. 5, italics my emphasis). Thus, what was required was a dialogue that enabled me and the participant to get in touch with our immediately presented, sensuous world before it is mediated, represented and made symbolic (p. 5). For this task, I adopted Kvale's (1996) concept of an interview as "the inter change of views between two persons conversing about a theme of mutual interest" or "the construction site of knowledge" (p. 2). In it I sought "the nuances and fullness of what is directly present" (Polkinghorne, 1989, p. 43, italics his emphasis).

The design of the interview schedule derived from several sources. One source was the outcome of detailed examination of the resulting data and research notes of a pilot study that was conducted with the first intake of students into the
Chapter 4: Approach to the Research

Bachelor of Behavioural Science program at University A. That study was intended to build on Ramsden's (1981) research on the context of learning. In it, I used Säljö's (1979) question, "What do you understand by the word learning?", but I tended not to probe students' responses about their experiences sufficiently. Even so, the data that were generated appeared to extend that reported by existing studies (e.g., Beaty, Dall'Alba & Marton, 1990; Säljö, 1979, 1982). For example, students' conceptions showed hints of a relational whole or composite that included different aspects of understanding, meaning, knowledge, rote learning and memory as a phenomenal field. At the time, others were exploring aspects of Chinese students' experiences of learning (Marton, Dall'Alba & Tse, 1993). Marton, Dall'Alba & Tse's (1993) schedule included questions that would allow further exploration of this kind of field. Accordingly, many of their questions were adapted for use in the current study. Since then, various modified forms of Marton, Dall'Alba & Tse's (1993) schedule have been used in studies of learning in Fiji (Mugler & Landbeck, 1994); Hong Kong (Marton, Watkins & Tang 1997); Uruguay (Nagle & Marton, 1993) and China (Wen & Marton, 1993).

Marton, Dall'Alba & Tse's (1993) schedule included a text reading task that consisted of a summary of the report the Open University students' conceptions of learning (Beaty, Dall'Alba & Marton, 1990). Previously, the text reading task and some interview questions that Säljö (1979, 1982) used in his study of conceptions of learning introduced to students the notion of surface and deep approaches. In both cases students were questioned about their responses to these texts. However, because I was interested in tapping the students' own experiences of learning in the context of the psychology curriculum, I did not use the text reading tasks.

The interview schedules used over the three years of the study are included in Appendix 1. The questions fall into two groups. Questions 1 to 4, reflect to some extent the interest of the earlier pilot study that was more concerned with a follow up of Ramsden's (1981) research on the context of learning. The remaining questions focus on students' conceptions of different aspects of learning and knowing, and their approaches to learning. The rationales for their construction and inclusion are discussed below.

I extend my appreciation to these authors for allowing me to use their interview schedule and I thank Gloria Dall'Alba particularly for her helpful correspondence.
Questions 1 - 4: Conceptions of Higher Education

Questions 1 - 4 were included for two reasons. First, there was genuine interest in the possible relationship between students' conceptions of higher education and their experiences of learning. But the questions were also placed at the front end of the interview because students were able to respond to them with ease. Thus the purpose of the questions was to encourage participants to talk naturally about their experiences.

The first question provides a concrete example of the change from a focus on causal to ontological explanation. In the pilot study the first question was "What made you want to do higher education?" In line with previous research (e.g., Entwistle & Ramsden, 1983; Ramsden, 1981) the purpose for its inclusion was to establish the student's general motivation for study. It is framed from a first order perspective. In the pilot study, students' responses could be categorised into two groups. The first, reflected a pragmatic or strategic rationale for study and were related to others' expectations: "I was expected to" by parents, friends, significant others or community; or to students' career aspirations, "it's a status," and "gives a wider range of (job) options." The second suggested a more personal focus: "it's something worthwhile;" "I enjoy studying, it's personally fulfilling;" "it's a challenge;" "expanding my mind;" "thinking analytically and critically;" and "to make you a better person." Analysis of the data suggested that the relation between students' conceptions of learning and their rationale for study may also reflect a relation between their conceptions of the two. Accordingly, the focus of the question was retained but it was changed to:

1. Now let us start with a general question. What would you say higher education means in general?

This change of focus, from the pilot to the final form illustrates a change of perspective from the first to the second order perspective. The further question - "Why did you choose to do it?" or Why did you choose to do higher education?" was included because although the framing of the question was from a first order perspective it did reveal an aspect of the student's approach to higher education which could be linked to their conception. The second question "Think back to the time when you were making a decision about what you wanted to study. What was it about University A (University B) that made you want to come here?" was a modified form of a question in the pilot study. Although framed in a first order perspective, it revealed important aspects of the student's views of the context of
learning. Questions 3 and 4 also derived from the earlier study:

3. I'd like you to tell me a little more about what it is like to be a student at University A (University B)?
4. What stands out for you about the Psychology Program (the courses) so far?

These questions provided detailed information about students' experiences of the programs themselves.

Questions 5 - 19: Exploration of the Phenomenal Field

Questions 5 to 19 focus more specifically on students' experiences of different aspects of learning as a phenomenal field. The questions were not necessarily asked in the same order, or worded in the same way, in which they are presented in the schedule. Rather they were adjusted to fit the students' responses to questions 5, 6 and 8, and in particular, that of question 7:

5. Can you tell me about something you have learned recently?
6. Could you give me another example?
7. What would you say 'learning' means in general?
8. The example you gave me was from your study in the Program. (learning outside the University setting). Could you tell me of another instance of learning outside the university setting (from your study in the program)?

So if a student's response to one of these questions included say the word understand, this was followed up with probes to determine what was intended by the word understand.

By nature the questions appear to be focused at a very general level. However, many of them provide an example of the kind of iterative movement between the general level and specific instances that was adopted. For example, students were asked continually to provide examples from their own experience of a learning episode and talk about the content of that learning: what they had learned, why they considered it was learning, and how they went about it. The emphasis on what and how reflects the overall interest in both the structural aspects of their experience and the perceived need to generate an explanatory ontology. In this regard, Questions 5, 6 and 8 were particularly useful. Students' responses continually provided concrete instances of their conceptions of specific topic material and how they learned it. Moreover they drew on these instances to illustrate their responses to more abstract questions. These questions also provided a means by which the meaning of their responses to the more abstract questions could be verified.
Questions 9 and 10, were not part of Marton, Dall'Alba & Tse's (1993) schedule. They were included because the research interest was concerned particularly with how students who were studying psychology understood learning.

9. You have told me what you think learning means in general. Now learning, or different aspects of learning have been an area of content that you have studied in the program (course). Can you tell me a bit about that?

10. Do you think maybe there is a difference between what you have learned about learning in the Psychology Program, (courses) and what you think about learning?

Questions 11 to 18 explored further aspects of the phenomenal field. The focus on understanding remembering and memorising reflects Marton's particular interest in differences between Western and Chinese learners' approaches to understanding and memorising. Questions 16 to 18 probe different aspects of conceptions of knowledge and knowing. Questions 11 and 12 show the same movement from concrete to abstract that was evident in earlier questions.

11. Can you tell me about something you have understood?
12. What would you say understanding means in general?
13. How do learning and understanding compare?
14. How do we remember things?
15. What about memorising, how does that compare with understanding?
16. Is it possible to memorise and understand something at the same time? How can that be done? or Why not?
17. Is meaning something important when studying, for instance, when you are reading or writing?
18. What is meaning? How does it compare with knowledge? What is knowledge?

Question 19 focused on the students' conceptions of the relation between teaching and learning.

19. How does teaching relate to learning? Does teaching always lead to learning? What does it take for this to happen?

The schedule was changed slightly for use in the third year to tap students' experiences of the program in terms of their overall career interests.

**The Participants**

In this section I outline the parameters of the intended samples and describe the processes involved in the selection of participants. I also provide a brief profile of the actual participants in terms of their age, gender and some of their prior experiences.
Choice of University: A Process of Self-Selection?

The general descriptions of the two universities, and that of the psychology programs that they offered, suggest that they comprise two quite different learning environments. The data indicate that though students may have been eligible to enrol in either program, they selected one in preference to the other on the basis of social and physical factors. For example, students chose to enrol at University A because it was small and they perceived that this would provide better access to teaching staff. Peter and Megan make typical responses to the question, what made you want to come to University A?:

...well I've had a couple of friends who have been here and I've come up occasionally to use the library. I find the atmosphere is ... not as cluttered as [University B] ... it's very friendly and open. Like ... I immediately felt at home here ... whereas the times I've been to [University B] it's very formalised and structured... (Peter, 91/11/A)

and:

I just thought I'd have a more personalised course compared to maybe [University B] ... because there'd be lower numbers in the class. ...I just thought that it'd be ... better learning for me... (Megan, 91/17-18/A)

In contrast students who enrolled in psychology at University B did so typically because of its reputation, size, or they were following in a relative's footsteps. For example:

...you're sort of brought up at school to think it's the best university to go to... (Ingrid, 91/13/B)

and:

...the range of choices ... also it had a good name from around different people I'd talked to that recommended [University B]... (Lotta, 91/15/B)

The differences in size and reputations appeared to have consequential effects for the characteristics of the two classes. The number of female students who enrolled in the Behavioural Science Program at University A was significantly higher than the national average for Behavioural Science programs in Australia in 1990 and 1991. The enrolment in that program in 1990 and 1991 was also made up of one third of mature students, that is, those who are aged more than twenty years. This was interesting given the fact that students who enrolled in the Behavioural Science Degree could only enrol in full time study whilst those at University B were able to enrol as part-time students. These characteristics of the class suggested that the

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2 All quotations cited in the thesis include a study name, the year of the interview, the number of the response on the transcript, and the University. This quotation was taken from Peter's first interview in 1991, at University A.
preference for the smaller university/class might have been associated with gender. Students who enrolled in the Behavioural Science degree at University A also indicated their commitment to study psychology through enrolment in a dedicated program.

The Intended Samples: Rationales and Parameters

Given these factors, the samples were planned to be stratified to reflect the first year population of students who enrolled in the Behavioural Science Degree program at University A to study psychology. At the time, I assumed that the selection of a sample that reflected the general characteristics of the class at University A could, because of the large class, almost certainly be matched by a group of students with similar characteristics in terms of sex and age at University B.

Accordingly, samples of 30 students were to be selected from each of the two programs. The sample size was set to allow for the attrition expected in a longitudinal study. The proposed samples were to consist of a ratio of 1:2 males to females. Both male and female groups were to include 50% of students over the age of twenty years. The decision to increase this proportion from 30% (see above) to 50% was based on the range of ages that was evident in samples in previous research (cf., Marton et al., 1993; Säljö, 1979, 1982). For each program the student samples were to be selected from those who were attending university for the first time in 1991 and who intended to major in psychology. The latter criterion was included to overcome any problems that compulsory enrolment in psychology courses may have produced at University B. The parameters of the two intended samples are shown in Table 4.2.

Table 4.2: Intended Characteristics of the Samples

<table>
<thead>
<tr>
<th>Sample</th>
<th>University A</th>
<th>University B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>School leaver/female</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Mature age/female</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>School leaver/male</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Mature age/male</td>
<td>*5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>30</td>
<td>60</td>
</tr>
</tbody>
</table>
Procedures for the Selection of Participants

Probably due to the differences in size, the psychology departments in the two Universities used quite different modes of communication with their undergraduate students. Moreover, the processes associated with each program were seen to be contextually dependent. Accordingly, it was not possible to use the same sampling procedures in both institutions. I was able to select a stratified, random sample of students at University A (subsequently called Sample A), and I obtained a self-selected stratified sample at University B (subsequently called Sample B). The two sets of procedures are described in the sections below.

Initial Selection Procedures at University A

At University A, I had direct access to students through the teaching situation and this was also the predominant means of communication with students in the program. The first year class from which Sample A was drawn were already aware of the study because some of their second year "buddies" had participated in the pilot study in the previous year. At the beginning of the second semester of their first year of study, I met with the whole class during a lecture period and gave them an overview of the research, its purpose, evolution, method and sampling procedures. For example, they were told that the study was concerned with student learning and that it would be longitudinal in nature. Students were supplied with forms requesting them to indicate their name and contact telephone number. Most of them expressed interest in taking part. During class we agreed to a process whereby I would contact them by telephone if they were selected for the sample. It was made clear to them that participation was a matter of choice and that they were under no obligation to take part.

The names of students who were willing to participate were first divided into female and male subgroups. These groups were then subdivided further into those who were aged 19 years or under and those aged 20 years or over, making a total of four sub-groups. Depending on the numbers in each subgroup, approximately every second or third student was selected to make up the desired number of students in each subgroup (see Table 4.2, University A). Students who were selected for possible inclusion in the sample were personally contacted by

3 If they wish, new entrants to the program are buddied with peers in second year to assist their introduction to university.
telephone. One or two students in the first selection round were difficult to contact and these were replaced by students from the appropriate subgroup.

**Initial Selection Procedures at University B**

Obtaining students for Sample B was more difficult. At University B, a notice board was used as the principal form of communication for the classes in the undergraduate program. Moreover, student participation in research studies at University B was a traditional practice that involved a standard process. First year undergraduate students who enrol in psychology courses are expected to participate as subjects in approved Department of Psychology experiments for up to 6 credit points per semester. This practice assisted postgraduate students and staff to complete psychological research. It was also intended to provide undergraduate students with first hand experience of the techniques and topics of psychological research. The program was supervised by the co-ordinator of the undergraduate program who was a member of the academic staff in the Psychology Department. Her role included the provision of advice to students about participation in particular research studies. I worked through her to obtain students for my sample. Sheets describing the scope of my study and the sample characteristics were placed along with others on a first year notice board at the beginning of the semester and students were expected to sign up to participate in a study of their choice. Thus my educational research was in a sense competing with that which focused more specifically on different aspects of psychology.

This procedure introduced a number of differences in the selection of the samples. For example, students at University A selected their degree program because they wished to study psychology whereas those who were enrolled in psychology subjects at University B may have been required to study subjects as a prerequisite for another course. The fact that psychology subjects at University B are taught as "service" subjects made it necessary to make a slight adjustment to the criteria for selection of Sample B. On the sign-up sheet it was stated that the project required students who were intending to proceed to Psychology Honours or a Postgraduate Diploma. This criterion was intended to ensure that the sample contained only students who were intending to continue the study of psychology. Another factor involved the differences in curriculum content between the two programs. Unlike University A, the first year psychology subjects at University B were offered in both semesters, and were not sequentially structured with prerequisites. At University B, the first scheduled psychology subject was considered to equate,
in terms of subject matter about learning, to students' experiences of subjects in first semester at University A. Accordingly, another criterion for inclusion in Sample B was that students had completed the first scheduled psychology subject in first semester 1991. A further criterion for inclusion in Sample B, that students should be studying full-time, was expected to overcome the difference in full time/part time enrolment patterns between the two programs.

Students were extremely slow in signing up for this study and the reasons for this are unknown. Quite early in the process it was evident that the study was perceived more favourably by female students than males. The undergraduate co-ordinator and I observed the process closely. When students consulted her about particular studies she recommended this study to them amongst others. Some students signed up for the study only to remove their names at a later time. After almost a month, a total of 28 students was finally obtained. Although the sheet was left on the student notice board while the interviews were in progress and a large printed request for more students in the school leaver and male categories was included, further participants failed to materialise. By then a significant factor was thought to be the time in the semester and impending examinations.

**General Procedures**

Students in both programs who volunteered or signed-up were contacted by telephone and informed that they had been selected for the study. Potential participants of Sample A were reminded again of the purpose and methods that were to be used. Those who volunteered for membership of Sample B received all of the information that those in Sample A had received in class. Students were asked if they were willing to have their interviews audio-taped and the procedure for taping was explained to them. All of those who were selected were asked if they had any questions and these were answered. Each student was asked to indicate times when they would be available for interview; given an appointment time, room number and telephone contact number. At University B this contact was followed up with a letter confirming the appointment and a map indicating the location of the interview venue. I instigated standard procedures to protect their anonymity and to ensure the confidentiality of the processes, and they were informed of these processes.
Actual Samples

The actual sample at University A comprised a total of 32 students. The distribution is shown in Table 4.3. Of the 32, 20 were female, 10 aged 19 years or less and 10 aged 20 years or more. The remaining 12 were male, of whom 4 were aged 19 years or less, and 8 were aged 20 years or more. Sample B comprised 28 students of whom 22 were female, 12 aged 20 and over and 10 aged 19 and under. The remaining 6 were male, 3 in each age group. A decision was made to accept the configuration of Sample B although the ratios of females to males, and older to younger students, which were originally specified were not altogether met. It also became necessary to accept part time students in Sample B in order to complete the requisite numbers. A total of 5 students in Sample B were enrolled in part time study. The ages of the two samples ranged from 17 to 55 years.

Table 4.3: Distribution of Samples A and B for the First Year of the Study

<table>
<thead>
<tr>
<th>Subset</th>
<th>Sample A</th>
<th>Sample B</th>
<th>Total participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>School leaver/female</td>
<td>10</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Mature age/female</td>
<td>10</td>
<td>12</td>
<td>22</td>
</tr>
<tr>
<td>School leaver/male</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Mature age/male</td>
<td>8</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>28</td>
<td>60</td>
</tr>
</tbody>
</table>

Follow-up Interviews and Attrition

Procedures to contact students for interviews in the second and third years of the study also differed between the two samples. My involvement with students at University A made it easy to trace those who were available for the study. Of the 32 students in Sample A, 25 participated in second year, and 23 in the third year. In second year, the possible pool from which students in Sample B could be drawn was 27 students because one tape from the first year of the study was incomprehensible. By using telephone numbers from the previous year I was able to contact 18 of the 27. Of these, 14 agreed to participate in a second interview. An attempt was made to contact the remaining 9 (all of whom continued to be enrolled) by letter which was mailed by the enrolment officer at University B. Of these, 7 contacted me and 6 agreed to participate in the study. A similar process
was used to contact the students of Sample B in the third year. Of the 20 who comprised the second year sample, 12 participated in the third interview. In total, 140 interviews were conducted during the length of the study. The sizes of the samples over the three years of the study are shown in Table 4.4.

The table shows that there was a substantial difference in the overall attrition rates of the two samples: 28% for Sample A in comparison with 57% for Sample B. In the main, the difference was due to the nature of the course at University B. For example, the loss of 8 students in Sample B, between second and third year, was due to the fairly strict requirements for entry to third year psychology subjects and the availability of alternative study options. Other factors that may have contributed to the higher attrition rate were the lack of credit for participation in research in second and third years, and my lack of access to the students in that course. Reasons for the attrition in both samples, ranged from deferral, withdrawal from or failure in the course, a wish not to be involved in the research due to pressure of work or family difficulties, failure to keep appointments after follow-up, and difficulties in contact.

<table>
<thead>
<tr>
<th>Subset</th>
<th>Sample A</th>
<th></th>
<th>Sample B</th>
<th></th>
<th>Total interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 1</td>
<td>Year 2</td>
</tr>
<tr>
<td>School leaver (female)</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Mature age (female)</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>School leaver (male)</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mature age (male)</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>25</td>
<td>23</td>
<td>28</td>
<td>20</td>
</tr>
</tbody>
</table>

Final Sample Sets

In this thesis, only the analysis of those data that were generated by students who were able to complete all three interviews have been reported. Accordingly, of the 60 students who participated in the first set of interviews, 35 completed all three interviews, generating a total data pool 105 transcripts. Their distribution by subset is shown in Table 4.5
Table 4.5: Distribution by Subset and Sample of Participants in the Study

<table>
<thead>
<tr>
<th>Subset</th>
<th>Sample A</th>
<th>Sample B</th>
<th>Total participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>School leaver/female</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Mature age/female</td>
<td>8</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>School leaver/male</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Mature age/male</td>
<td>6</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>12</strong></td>
<td><strong>35</strong></td>
</tr>
</tbody>
</table>

*Inter Views: Processes and Initial Outcomes*

Kvale (1996) likens well conducted interview research to an "art" (p. 13). He defines a semi-structured interview as one "whose purpose is to obtain descriptions of the lifeworld of the interviewee with respect to interpreting the meaning of the described phenomena" (p. 6, italics his emphasis). This kind of interview "is a conversation that has a structure and a purpose. It goes beyond the spontaneous exchange of views as in everyday conversation, and becomes a careful questioning and listening approach with the purpose of obtaining thoroughly tested knowledge" (p. 6) where participants "formulate in a dialogue their own conceptions of their lived world" (p. 11). Despite the focus on dialogue and interaction, this kind of interview does not constitute an equal partnership. Rather, as Gadamer asserts, it is taken over by the "law of the subject matter" (Kvale, 1996, p. 21) and the knowledge interest determines, defines and controls the situation. Thus the interview comprises a professional conversation in which the distribution of power is asymmetrical.

Like Marton and Booth (1997), Kvale (1996) draws on the Gestalt notion of figure/ground to illustrate the modes of thinking within the interview situation. He describes the interaction between participants as "an alternation between the knowers and the known, between the constructors of knowledge and the knowledge constructed" (p. 15). In this concept of interview is seen the iteration between self and other that I described in Chapter 3—the to-ing and fro-ing between first and second order perspective that characterises the knowing relation. It involves first a focus on the learner's experience in what Gadamer (1989) describes as a merging of horizons. It also requires "an act of discrimination, a fine-grained, sensitively nuanced selective process" (Eisner, 1993, p. 5) that allows
learners' experiences to be discerned from moment to moment. Bernstein (1983) emphasises the importance of being aware of the evaluative aspect of interviewing. Drawing on Habermas, he argues that in "classifying or describing speech acts" we presuppose as researchers that we understand their validity for the speaker. Rather, we must become aware of what it is that enables participants in an interview "to take the position that they do take"—the way in which, "under suitable circumstances", they themselves might "defend its validity" (p. 182). Bernstein is referring to aspects of Buber's (1937/1970) I-You relationship and the knowing relation that I elaborated in Chapter 3. In his description he captures the explanatory face of an ontological approach. It includes both empathy and the ability to make decisions about meaning.

The effectiveness of this activity is a crucial aspect of communicative validity yet it has not be explored to any great extent in literature on interviewing. As a process it is assessed not in terms of the soundness of the eventual claim but in terms of the structure of the act and the tracking and clarifying of the other's experiences. It is itself an example of Gadamer's hermeneutic circle where both interviewer and interviewee gain increasing understanding of the object of research. As such, this kind of communication as interaction achieves and maintains its own kind of truthfulness.

**Interview Procedures**

On arrival the interview process was explained to each participant. An initial taped interaction took place which included some simple informal questions and answers, for example the ease with which they found the meeting place etc. During this initial taping they were reminded of the arrangements for confidentiality and asked if they had any questions about the study. This interaction served two functions. It allowed the two of us as participants to get to know each other a little and relax with each other. It also allowed the recording equipment to be tested prior to each interview. After this initial discussion, the tape was rewound and when the student indicated a readiness to proceed the interview commenced.

Students were encouraged to talk about their experiences and be as open as possible. Each of the questions in the interview schedule was probed further by what and how types of question. For example: "What do you understand by that?" "Could you tell me more about that?" "What does that mean?" "How do you see that?" "How do you understand that?" and, How do you go about it?" A
particularly good probe seemed to be: "Can you give me an example of that?" At a certain depth, effective probing showed a circularity where the topic or experience appeared to become exhausted and both of us began to recognise redundancies. This phenomenon usually signals the exhaustion of the topic under discussion. When it occurred I moved on to another aspect of the schedule. In addition, responses were regularly clarified by the use of paraphrasing or a rewording of a question in another part of the interview. I also monitored the kind of question that I asked and alerted the student when I thought that I was leading them. In this situation we sometimes backtracked to their previous response or I asked them to clarify their understanding. All students were reminded from time to time that the focal interest was their experience rather than mine. These aspects of the approach to interviewing make a contribution to both the reliability and the communicative validity of the research.

On completion of the interview participants were thanked for their help and told that they would be kept informed about the progress of the study. They were told that on completion of the whole study they would receive a copy of their transcripts. The length of the interviews ranged from 40 minutes to one and a half hours. Although the interviews were spaced at wide intervals most participants said that they remembered the previous experience or they recognised certain questions. However, many students indicated that they were unable to remember their responses, and although some of the others thought that they had responded to questions in a similar way to the previous year, a check of the data indicated that this was in fact not the case.

**Inter-subjective Agreement in the Interview Situation**

The question of inter-subjective agreement arose at different times during the study. According to Sandberg (1997) the issue for the kind of interview described above is to ensure that one is faithful to the participant's conception of reality. However, this assertion presupposes a situation in which the participant is a passive respondent who experiences an objective reality that exists within the dynamic of the interview. On the other hand, neither was the interview experience the, perhaps ideal, joint construction of meaning that Mischler (1986) intended in his concept of interview as the mutual shaping of discourse. Instead, as I indicated above, this kind of *inter view* comprises a professional conversation which is guided by experience of the phenomenon. Furthermore, Scheurich (1995) asserts that "human interactions and meaning are neither unitary nor teleological. Instead,
interactions and meaning are a shifting carnival of ambiguous complexity, a moving feast of differences interrupting differences" (p. 243). He argues that the reality of interviews is that they are far "more ambiguous, relative, and unknowable" (p. 244) than either Mischler, or other literature suggest.

Indeed, Scheurich (1995) argues that the interview situation is packed with the baggage of both participants and the final written result is probably "overloaded with the researcher's interpretive baggage" (p. 249) that consists of the intersection of professional and social background. His solution is to highlight both the baggage that is brought to the interpretive moment, and the communicative context in which the interaction occurs. This I have tried to do in regard to my beliefs about, and my conduct of the research. Nevertheless, the best that can be achieved in the interview itself is a reasonable level of agreement after sufficient care has been taken to clarify and check the communicative interaction.

However, longitudinal data produces another sort of evidence of intersubjective agreement, in that it illuminates an intra-individual continuity that cross sectional data cannot provide. When I examined the sets of three transcripts for each participant, it included evidence of their personal style in the communication itself, and in the themes that were introduced and then re-introduced on the second and third occasion. As I became familiar with the data, I was able to "recognise" the person at the beginning of the transcript. This phenomenon is yet to be explored because it was not the main focus of the original research. However, it does support the idea that the individual is able to exert their presence in transcribed data (e.g., Scheurich, 1995). Examination of the data also indicated that, on the whole, students demonstrated a reasonable progression of experience, or alternatively, a narrative that accounted for the lack of it. In other words, the data were believable given my experience of the individuals involved.

**Preparation of the Data**

Each individual interview was transcribed verbatim by a professional audio-typist. I checked and corrected each transcript against the original tape for accuracy, and on many occasions, rechecked different aspects of the interactions as I proceeded with the analysis. For the sake of anonymity, actual names of participants and their teachers were removed from the transcripts. A list of pseudonyms was prepared that had no relation to students' original names and participants were randomly allocated one of these names for the identification of their set of transcripts.
Chapter 4: Approach to the Research

Specific notes that were made during and after each interview were appended to the transcripts.

The Nature of the Data

As both Perry (1970) and Baxter Magolda (1992) found, qualitative data collected over several years from a group of undergraduate students provides an extensive, rich, and extremely complex resource for the exploration of human learning. Appendix 2 includes a transcript that illustrates the nature of these data. The length of the transcripts typically ran to 15 single spaced A4 pages.

Initial examination of the depth of content in the sets comprising three transcripts for each student suggested that the data were well situated to address the research questions that are outlined above. The examination revealed an obvious complementarity between the nature of these data and previous studies of conceptions of learning (Beaty, Dall'Alba & Marton (1998); Marton, Dall'Alba & Beaty, 1993; Säljö, 1979; 1982) and understanding (Entwistle & Entwistle, 1991) and knowledge (Dahlgren & Pramling, 1985). The data were observed to reflect certain aspects of the research on epistemic beliefs, particularly that of Perry (1970). It was also evident that they had the potential to extend our knowledge of phenomena that comprise experiences of learning and their internal structural relations.

However the data posed some issues of management that were not able to be met by a phenomenographic method of analysis. Observation of single transcripts suggested that the meanings of the different phenomena that comprised the experience of learning for an individual student were coherently related to each other. This observation supports the phenomenographic interpretation of functional or internal relations (Marton & Svensson, 1979). It affirms Svensson's (1976) argument that different aspects of a complex phenomenon like learning are strongly internally related and should not be treated as separate components in analysis. That is, that "the categorizations of data should not be made independently for different aspects of the phenomena, but rather delimited in relation to each other" (p. 187). The observation also supports Dall'Alba's (1988) contention that conception and approach cannot be conceptualised separately.

I use 'set' to describe the three transcripts of a single student, that is, the three years of data that were generated by an individual.
Furthermore, the data suggested that a learner's _experience_ was not something that comprised qualitatively different _conceptions_ of phenomena within the temporal space of a single interview. Rather, the meaning of each phenomenon (e.g., understanding, memorising remembering etc.) of a particular student's experience was seen to contribute to the meaning of each and all of the other phenomena of that experience in a way that reflects the hermeneutic part/whole metaphor. For example, in a case where the content of the transcript contributed to and was categorised as _Learning as Change_, it was evident that the meaning of _memorising_ mentioned briefly and simply, early in the interview in relation to an example of learning, was the mental rehearsal of the networking of a concept, its relations and defining contexts. The learner understood memorising as a tool for learning, something that clarified learning—a reflective activity. This same activity was undertaken in relation to examinations and learning in other contexts. That is, when the learner referred to memorising in different parts of the interview this was the meaning that was referred to. Moreover, this meaning of memorising was integrally and specifically related to, and helped to define the meaning of _Learning as Change_. Yet a traditional phenomenographic treatment of this transcript may have resulted in three conceptions of learning: learning as memorising and reproducing, learning as understanding and learning as seeing something in a different way (e.g., Marton, Dall'Alba & Beaty, 1993). In such treatment the actual meaning of memorising in the experience of _Learning as Change_ would be lost, as would a defining aspect of the experience itself. These observations raised two issues. First, to treat the related phenomena of an individual's experience as disparate non-related entities, like a conception of learning and a conception of memorising, invalidates the meaning of the learner's contextualised experience. Second, such treatment will fail to capture the complexity and depth of such experience.

**Analyses**

The observations outlined above and much of the substance of Chapter 3, suggested that an individual's lived experience should be treated wholistically in analysis. Accordingly, the whole transcript became the basic unit of analysis—a focus at the level of the individual rather than at the intra-individual level. This approach allowed the different phenomena that make up a learner's experience of learning to be discerned separately yet treated as an interrelated set of phenomena within a particular phenomenal space. As a practice, this too contributed to the
coherence and consistency criteria for communicative validity. The analyses of data comprised four distinct phases:

1. Familiarisation with the data and initial planning.
2. A categorisation process aimed at the level of the individual transcript.
3. Elaboration of descriptive dimensions.
4. Preparation of exemplary cases of development and change.

These phases are described below.

1. **Familiarisation With the Data—Initial Longitudinal Exploration**

The purpose of this phase was to gain an overview of the potential of the data. Reference has been made to some of its outcomes in previous sections. The three transcripts for each individual were explored as a set. Initially, this exploration was intended to comprise the main analysis and provide the principal results of the study. The focus of the exploration was twofold: the nature of the experiences, and the change and development of experience over time. However, the complexity that already existed in the data was conflated by the difficulty of completing two tasks in a single activity. Nevertheless, this initial exploration provided the basis for decisions about subsequent procedures.

2. **Analysing Experiences: An Explanatory Ontology**

The main analysis provided the ontological description and explanation of the variation in experiences. In contrast to the initial exploration that was outlined above, in this analysis, the within-individual development and change across the three years was ignored and the focus of interest centred only on the learners' pooled experiences of learning. This main analysis focused on two levels—the discernment of similarity and variation between individuals, and a similar discernment of the within-individual relatedness and variation in a learner's experience of learning. It was assumed that any differences between Samples A and B would be revealed in the overall variation that emerged, so the two samples were treated as a single pool of data. The outcomes of this analysis are reported in Chapters 5 - 8. The analysis comprised three stages which are described in detail below.

a) Initial Processes

Out of the pool of 35 sets of data, all 36 (12 x 3) interview transcripts of Sample B were selected for the main analysis. These were matched by a random selection of
10 sets of transcripts from students in Sample A comprising a total of 30 (10 x 3) transcripts. Thus the analysis was conducted with a working "pool of meaning" (Marton & Booth, 1997, p. 133) of 66 transcripts. These transcripts were subjected to an initial and relatively crude categorisation process. Each transcript was read and re-read with a focus on within-individual internal relations and between-individual similarities and differences. Each part of a single transcript was assumed to be internally related to its other parts and so each aspect of experience was understood in the context of the student's whole experience.

The complexity of the data suggested the need to simplify Marton and Booth's (1997) what/how framework. My main focus in analysis was their How which I called the act of learning. The act of learning was reduced to a referential aspect or aspects and structural aspects. In Chapters 5-8 this aspect of the act is referred to variously as the referent, focus or figure of the experience. I included Marton and Booth's direct object of learning but used it principally as an illustration of the learner's experience of the how aspect of learning. The framework I adopted is shown in Figure 4.1 below.

![Analytic Framework](image)

Figure 4.1: Analytic Framework (adapted from Marton & Booth, 1997)

Initially, individual students' experiences were summarised briefly in terms of the overall nature of the act of learning—its main referent and structural aspects. Each transcript was compared with all of the others. Transcripts that revealed similar foci and patterns were placed together in a pile, each pile representing a qualitatively different experience. Initially, six piles were evident. For each pile, an initial draft description of the category was prepared and compared with data from the
transcripts that contributed to it. When it was found that there were insufficient data contributing to one of the categories, a further five sets of transcripts were randomly selected from Sample A (a total of 15 transcripts). Thus, the initial analysis was conducted with a total pool 81 transcripts.

b) A Descriptive Ontology

The second stage of this analysis comprised a rigorous, and detailed examination of the data focusing on both the referential and structural aspects of the act of learning and its object. The nature of the analysis was hermeneutic—an intense, intellectual, iterative engagement with each whole transcript, its parts, and the pile of transcripts from which it was drawn. The process that was used with each transcript is described below as a series of guiding questions though it should be noted that it was never the linear activity that such steps imply.

1. *What* is the learner focusing on in the act of learning? This question addresses the main focus or referential aspects of the act of learning—its meaning. What phenomena are involved and what meanings are associated with them? What are the defining characteristics of the main referent or referents? These questions focus on the referential aspects of the act of learning.

2. *How* are the phenomena related to each other? *How* do they form a whole? These questions refer to the structural aspects of the act of learning.

3. *What* is the object of learning? *How* is it described? *What* are its defining characteristics? This is a reference to Marton and Booth's (1997) *what* or object of learning—its referential aspects.

4. *How* are the parts of the object of learning related to each other? This refers to the structural aspects of the object of learning.

5. *How* is the object of learning related to the act? This question focuses on the relational aspects of the whole experience.

6. In *what* way does the overall experience of learning define the meaning of the object of learning? This question emerged as the analysis progressed when this kind of definition was observed.

Through this more detailed analysis the piles were redefined and refined as categories of experiences. Some transcripts were moved to another pile. There was sufficient within-pile variation to indicate the need for the constitution of several sub-categories. Later, this sub-categorisation was recognised as an
important contribution to the overall picture of gradation across the vertical dimensions. It provided a picture of finely nuanced variation or morphing of experience that was invaluable from a developmental perspective.

At this point the remaining 27 transcripts were analysed. Some further refinement of the categories was required but there were no major re-adjustments so in the main these transcripts corroborated existing description. This phase of the analysis was time consuming and complicated. It resulted in a detailed ontological description of each experience in which its main phenomena were identified.

c) A Focus on Ontological Explanation

The third stage of this analysis involved the iterative interrogation of the descriptions of the categories and the original data to explore the logic of the internal relations of each experience. For example, in Learning as Gaining Knowledge learners focused only on the act of gaining knowledge. There seemed to be no temporal aspect to the experience. The explanation for this characteristic appears to lie in the way in which students understand the meaning of and relations between learning and understanding. Simply put, understanding is perceived to occur only when information is linked together in a lot of areas. Thus learning involves waiting to understand and other aspects of learning are suspended. This experience is described in more detail in Chapter 5. This kind of explanatory analysis is prompted by a curiosity about particular structures of experience. Its focus is why—why are these phenomena related in this way? This concern with explanation at the ontological level extends the phenomenographic notion of intentional relation.

The Truthfulness of the Analytic Process

Throughout this phase of the analysis, an iterative process of questioning and checking was established to ensure the appropriateness of the processes for both the data, and the overarching theoretical basis of the study. The idea of defensible knowledge was assessed through an intense, indepth cross transcript examination of multiple instances—a process that is called variously, consensual validity (Eisner, 1991); informant triangulation (Kvale, 1989) or structural corroboration (Eisner, 1991). As a concept of validity it is concerned with agreement, rather than truth so as an isolated process it makes little sense (e.g., Phillips, 1990). Consensual validation is concerned with the concurrence of experiences and their
critical evaluation. Thus another criterion of truthfulness is the internal logic (Kvale, 1989) of the structure of the experience. These processes involved the repeated interrogation of the data to establish the hermeneutic or explanatory framework of the experience. For example, as the transcripts were collated into piles of similar experiences, I sought evidence of within-group agreement of the existence of phenomena, and patterns or structural relations, to support each description. In addition, in the context of the entire data, I checked and rechecked that the evidence presented to support the variation in experience concurred with my experience of the participants and that of contemporary research. That the research makes sense within the wider framework of higher education becomes a form of triangulation or "multiplicative corroboration" (Eisner, 1991).

3. Identification and Elaboration of Descriptive Dimensions

The categories as outcomes of the previous analysis became the source of data for the elaboration of multiple descriptive dimensions, which when viewed as a composite dimension along which the categories are aligned, revealed the pattern of change and development over time. Thus this third phase of the analysis focused on the vertical aspects of the outcome space. It is important to note here that the adoption of the individual transcript as the basic unit of analysis makes the process inclusive of the individual's experience at the moment when the focus of analysis changes from the transcript to the group experience. The analysis involved the identification of each phenomenon in each category of experience. Subsequently, the meaning of each phenomenon was traced across the categories and its dimensional characteristics were described.

Table 4.6 provides an example of the dimensional characteristics of the phenomena, memorising and understanding. In the table the different nuances of interpretation or variation in the meaning of the experience are described in the first and third columns from the left. In each case, columns A to D align with the four main groups of experiences described in Chapters 5-8. They are listed below and summarised briefly later in this Chapter (p. 162):

Category A Reproductive experiences
Category B Relational experiences
Category C Constructive experiences
Category D Transformative experiences

Table 4.6 shows how the pattern of development in each dimension is diagonal—consistent with a morphing that occurred across the categories in
Table 4.6: A Comparison of the Morphing of Experiences of Memorising and Understanding

<table>
<thead>
<tr>
<th>Description of Memorising</th>
<th>A 2</th>
<th>B 1</th>
<th>B 2</th>
<th>B 3</th>
<th>C 1</th>
<th>C 2</th>
<th>D 1</th>
<th>D 2</th>
<th>D 3</th>
<th>D 4</th>
<th>Description of Understanding</th>
<th>A 1</th>
<th>A 2</th>
<th>B 1</th>
<th>B 2</th>
<th>B 3</th>
<th>C 1</th>
<th>C 2</th>
<th>D 1</th>
<th>D 2</th>
<th>D 3</th>
<th>D 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>To accumulate words and given relations by absorption or repetition</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To know a lot by taking in the links at level of word or memorised concept.</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
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<tr>
<td>To remember by committing words or formulae to memory through purposeful repetition.</td>
<td></td>
<td>x</td>
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<td></td>
<td></td>
<td>Knowing the (memorised) given meaning—how things are joined together or the idea behind it.</td>
<td></td>
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<td>x</td>
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<tr>
<td>To remember by committing the given meaning to memory through purposeful rehearsal of the meaning.</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
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<td></td>
<td>Knowing the memorised process or the steps, how it works, the idea behind it, how it relates to other things.</td>
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<td>x</td>
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<tr>
<td>Remembering as rehearsing how to do it or how to apply (relate) it.</td>
<td>x</td>
<td>x</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>Knowing the relations, the why, cause and effect, history and implications.</td>
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<td>x</td>
<td></td>
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<tr>
<td>Memorising is reinforcing the links or connections between different parts.</td>
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<td></td>
<td>x</td>
<td></td>
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<td></td>
<td>Knowing the meaning, being aware of the knowledge/its application.</td>
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<tr>
<td>Reinforcing by trying it out in new situations.</td>
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<td>x</td>
<td></td>
<td></td>
<td></td>
<td>Knowing or seeking the meaning of the parts and their relations—how the context affects the meaning.</td>
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<td></td>
<td></td>
<td>x</td>
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<tr>
<td>Memorising is an aid to developing relations.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
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<td></td>
<td></td>
<td>Coming to know the whole and its parts, the ongoing act of becoming/developing as a person.</td>
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<td>x</td>
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<tr>
<td>Memorising is using a number of different strategies to manipulate understanding and make relations.</td>
<td></td>
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<td>x</td>
<td>x</td>
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<td></td>
<td>Having insight or awareness of something, looking at something differently.</td>
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<td></td>
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<td>x</td>
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<tr>
<td>Memorising is a tool for learning: a skilful activity that is necessary for learning.</td>
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<td></td>
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<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>To grasp the central meaning of something, having empathy, seeing something differently.</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Rehearsing the construction of meaning.</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
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<td></td>
<td></td>
<td>Is a worldview—a way of thinking.</td>
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<td>x</td>
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<td></td>
<td>Subjective, one's state of reality is knowledge or truth.</td>
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</tr>
</tbody>
</table>

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experiences of memorising and understanding. Despite the separation of memorising and understanding as phenomena from the phenomenal field, the influence of other aspects of the experience can be seen in the different descriptions of each experience. For example, in the middle of the left hand column there is a developing focus on making relations that is first evident in knowing the steps and later becomes a quite complex use of associations to memorise. The internal relatedness of the dimensions is further illustrated by the similarity in the patterns of morphing of memorising and understanding. The Table shows the close correlation between dimensions that fits the analogy of the interweaving skein that I described in Chapter 3 (p. 106).

4. Case Studies

The fourth phase of the analysis was to have involved the preparation of exemplary case studies in order to illustrate change and development of experiences over time. This analysis focused on selected sets of three transcripts of individual students. It involved an exploration of the data at both descriptive and explanatory levels across time. Due to the size of the study this phase became foreshortened. In the event only one individual case study is included in Chapter 9 and that focuses only on the dimension of knowledge. Nevertheless, it provides an example of what is possible with the data.

**Learning as A Phenomenal Field—The Presentation of the Outcome Space**

In the sections above I described the management and analyses of extremely rich and complex qualitative data. However, like Baxter Magolda, (1992) I found the presentation of the outcomes of my analyses even more difficult. I was confronted continuously by the tension between a focus on the individual and a focus on decontextualised data. In the study I came to know each participant. They told me about their previous, (sometimes quite impoverished) educational experiences, parent's divorces, problems with juggling family responsibilities and study, their misunderstandings with and separations from partners, their excitement at forming a new relationship, and their aspirations for themselves and their children. We laughed and sometimes cried together. I wanted to maintain a sense of these personal connections while at the same time trying to understand the structure of the students' experiences. The traditional phenomenographic method focuses only on
Chapter 4: Approach to the Research

the structure of awareness yet it was the richness of the personal experience that enlivened the structure of awareness and allowed me to understand these students' experiences. Finally, I compromised and focused on the meaning and structure of their experiences of learning in the thesis. The future elaboration of case studies may allow the incorporation of their wider life experiences.

Nevertheless, I adopted several strategies to make the relationship between individual students and their data more inclusive. For example, I assembled an annotated case study of each experience in which I present the perspective of 'composite' student: one who might experience learning in that particular way. In order to stay as close to the original data as possible I used only one or two students' data to construct each case. Each case illustrates the logical coherence that exists within the learners' experience. The case studies were prompted by Shulman's (1992) case method approaches to teaching. As an aside, the strategy may also respond to another agenda in that, much like the use of case methods in teaching, students can use the case studies to explore their own acts of learning. In each experience, I have included a description of its general affective characteristics and I also adopt the learners' own use of language wherever possible.

Each experience is understood to occupy a particular part of the phenomenal field within the outcome space. To recap, in this study I have used the word experience to encapsulate how I understand the learner to have constituted the experience of learning in terms of the meaning of its related phenomena such as, learning, memorising, remembering, understanding and knowledge, and the way in which each of these meanings provides a defining relation for the other. Accordingly, you are asked to suspend judgement about the meaning that you might ascribe to such constructs and interpret them only within the meaning provided by the context of the particular cluster of phenomena in which they are used. That is, what is it that the learner means by this? This kind of suspension of judgement resembles the hermeneutic nature of the original analysis.

Chapters 5, 6, 7 and 8 present my interpretation and subsequent construction of the participants' experiences of learning and understanding (i.e., the categories and subcategories referred to above and in Table 4.6). Each chapter describes a group of integrally related experiences. For example, Chapter 5 is concerned with reproductive experiences of learning which comprise two subcategories. Chapter 6 focuses on learning as relating and shows a gradual shift from reproductive strategies to those that focus more centrally on understanding knowledge. Chapter
7 focuses on the wholistic nature of understanding and the construction of a knowledge object. Chapter 8 describes different forms of transformative experiences of learning. A brief outline of the main topics of the chapters follows. For each experience I include an alphanumeric identification that is used in the Tables included in this Chapter and in Chapter 9.

**Chapter 5: Reproductive Experiences of Learning (A).**

Learning as Gaining Knowledge (A1);
Learning as Reproducing (A2).

**Chapter 6: Relational Experiences of Learning—The Route to Insight (B).** This chapter includes:

Learning as Relating, Remembering How (B1);
Learning as Relating, Knowing Why (B2);
Learning as Relating, Understanding Where (B3).

**Chapter 7: Constructive Experiences of Learning—The Development of Skill and Autonomy (C).** This chapter includes:

Understanding as relating (C1);
Understanding as seeing the whole (C2).

**Chapter 8: Transformative Experiences of Learning—Using the Mind (D).** This chapter includes three experiences, two of which are described quite fully, whilst the third is illustrated by two individual case studies. They are:

Learning as Looking at Something in a different way (D1);
Learning as Personal Change and Development (D2);
Learning as a Constitutive Act—Learning as Constructing a World View (D3); and,
Learning as Constituting Self (D4).

Decisions about the locations of the experiences were dependent on the way in which they appeared to be focused in the data. For example, despite the reproductive nature of Learning as Relating—Remembering How, the experience focused on procedural steps and organisation. Thus it appeared to be an early form of Learning as Relating. There are overlaps across categories but this is to be expected given the focus on an individuals' experiences of learning.

I have adopted a similar pattern of description for each chapter. In each, I provide an overview of the main features of the group of experiences and I summarise their main referent and predominant structural relations in a table. At the
beginning of the description of each experience within the chapter, I illustrate the act and object of learning in a figure that provides an example of these features. The contribution that each experience makes to the descriptive dimensions of the outcome space are also tabularised. The content of these tables should be interpreted as a relational whole, in that within a particular experience, each aspect is defined by the meaning of its related parts. For each experience I describe the focus or referential aspects of the act of learning. Subsequently I focus on the structural relations of the act. Finally, I provide examples of learners’ descriptions of learning specific content knowledge and show the relation between these examples and how learning occurs. All experiences are illustrated by quotations taken directly from the data. All quotations cited in the thesis include a study name, the year of the interview, the transcript location number, and the University. Where mispronunciations were made by the students, they are included.

The Truthfulness of the Research

The outcomes of research constitute aspects of a meta-narrative of knowledge rather than a representation of objective truth (Polkinghorne, 1989, p. 39). Questions of context cannot be overcome easily. The task of research is to develop knowledge that is the most valid and reliable that can be achieved yet also to realise that what we "know is unfinished and open to revision." This view also involves a "concern with the social use of knowledge, and an awareness that knowledge acquisition cannot be divorced from social values" (Polkinghorne, 1989, p. 39). The overarching criterion for the assessment of the validity of this research is the way in which this chapter, and those that follow, allow you as the reader to get in touch with the qualitative world of the participants (Eisner, 1993), yet they must also communicate the complexity of such experiences. It is, as Polkinghorne (1983) suggests, the clarity of the meaning of the experience as it is revealed in the communicative context that provides the overarching criterion for truthfulness. Such descriptions should portray phenomena accurately, vividly, richly and with elegance (Keen, 1975, in Polkinghorne, 1983, p. 45). Such truthfulness becomes evident also in the generation of new understanding that is reasonable (Salner, 1989) given the parameters of the study and previous research outcomes. It poses the question—does the narrative make sense and are the conclusions supported?
CHAPTER 5
REPRODUCTIVE EXPERIENCES OF LEARNING

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CHAPTER 5
REPRODUCTIVE EXPERIENCES OF LEARNING

Learning is absorbing information - it's remembering and telling someone about it.

Introduction

My account of the development of experiences of learning begins with the description of two distinct but limited ways in which learning is understood: Learning as Gaining Knowledge and Learning as Reproducing. These acts differ from each other in terms of the learner's focus or central referent, and the structural relations of the different facets of the experience. By act, I refer to the how of Marton and Booth's (1997) structure of experience (see Chapter 3, p. 83). Learning as Gaining Knowledge is concerned predominantly with the relatively indiscriminate, passive absorption of information. Learning as Reproducing is a more focused and purposeful, repetitive activity that focuses on recall and reproduction. The main referents and structural relations of the experiences are summarised in Table 5.1. To recap, by referent I refer to what it is that is made figural in the experience, or Marton and Booth's (1997) referential aspect. The structural relations refer to the way in which the various phenomena within the experience are internally related to each other to give meaning to the experience.

Table 5.1: The Referent and Structural Relations of Learning as Gaining Knowledge and Learning as Reproducing

<table>
<thead>
<tr>
<th>Experience</th>
<th>Main Referent</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaining Knowledge</td>
<td>Gaining more knowledge by absorbing facts and figures and their relations.</td>
<td>Taking in what is prescribed. Passive accumulation of knowledge and its given relations.</td>
</tr>
<tr>
<td>Reproducing</td>
<td>To absorb and/or commit words formulae to memory in order to reproduce it by telling or explaining.</td>
<td>Repetition at the level of word or formula and/or the given meaning until one remembers.</td>
</tr>
</tbody>
</table>

These experiences of learning are those of less confident, new tertiary learners. As I talked with the students I was moved by the limitations and ambiguities inherent in acts of learning that are relatively static and unvarying. Such experiences provide challenges for these learners. Inexperienced and less confident students take in knowledge because they perceive that it is what is expected of them in more normative academic contexts. Yet they are also aware that as an act of
learning absorption is work intensive and ineffective (e.g., the introduction to Case 5.1). Reproduction is a safe haven for less confident students because they perceive that it responds to assessment requirements. Yet they see others "doing it differently." However, in later chapters it becomes evident that reproduction characterised as a kind of repetitive act is an important strategy in the development of more effective approaches to learning. So this chapter constitutes the beginning of the story of the development of experiences of learning.

Reproductive Experiences of Learning: Learning as Gaining Knowledge

Structurally, this act of learning appears to be relatively simple. The main features of the experience are summarised in Figure 5.1. The learner's focus in this experience is gaining or increasing knowledge: taking in or absorbing prescribed facts and figures and their given relations. Structurally, facts and figures are absorbed relatively passively, and indiscriminately as they are given (whether the source is text or teacher). In the example provided in Figure 5.1, the object of learning is the theory of operant conditioning and the student retells what is learned as a list of items.

![Learning as Gaining Knowledge Diagram](image)

Figure 5.1: Summary of the Act and Object of Learning as Gaining Knowledge

Case 5.1 exemplifies students' experiences of Learning as Gaining Knowledge. The meaning of the main phenomena and structural relations are summarised in Table 5.2. This is followed by a more detailed account of the referential and the
Case 5.1: Learning as Gaining Knowledge

It's taken me a while to adapt. I've had to change my study techniques and I don't think I've got it right yet. I've found that I can't analyse very well. I get full marks for results and methodology but once I come to analysing the data we've been given and interpreting it I seem to fall down. I just don't do it the way I'm supposed to. I know the content, I'm pretty good at absorbing information and giving it out but I don't give them as much information as they seem to want.2

I think learning is gaining more knowledge, absorbing it, taking it in - not just the facts and figures but how the facts and figures fit together.4 Some of it's presented in lectures and the text books and tutorials fill it in.5 You get little bits of information from all over and the lecturers sort of integrate it. I mean usually they sort of tie it up but I don't know.6 Like they fill in the gaps or particulars if you like, and when you don't have a piece there's a hole in your knowledge.5 How do I learn? Well, I sit down with the material and go over it a couple of times and hope it sinks in7 or I'll write it out, just write it out over and over or I say it aloud parrot fashion until it goes in.8

I suppose understanding is more than learning, it's grasping what that person is trying to say. If you can do that you have knowledge of their understanding.9 Like they give you facts and figures and examples, so that you get the information and then the examples show you how to use it, link it up. It's sort of like step one is to learn it and then step two is to link it together and then you have the knowledge and you understand.10 Learning seems to be more like a precise definition but it doesn't mean you know how to use it. I think understanding is really being able to use it, link it to something else.10 Have I applied it? Well no, not so much just now. I guess you've got to learn all the information first before you can actually link it together and get understanding.12 I mean I've got lots of information stored in my brain but whether I can actually relate it to anything else to make it of any use I don't know. I think that's where understanding comes in, to actually take those little bits of learnt information and link them up12 - do something with them. Have I been able to do this? Well I can see that it might happen13 but I'm still unsure of it to actually put it into practice.14 I mean you can absorb heaps of facts and figures which is part of your learning, but to understand them I guess you've got to know the meaning of each of the facts and figures15 and your understanding is sort of like part of knowledge. Meaning? I guess I see meaning as part of learning - meaning's like a link.16

Note:

1 Quantitative view of learning.
2 Focus on what they want.
3 The focus: gaining/absorbing.
4 What is absorbed is atomistic: bits, pieces and their relations.
5 Flat, 'side-by-side' view of knowledge.
6 Example of external agency.
7 Passive absorption - hoping it will sink in.
8 Repetitive memorisation.
9 You take in another's understanding.
10 Understanding is using it, linking it with something.
11 Learning and understanding are understood as separate entities.
12 Each part is memorised separately and then you get understanding.
13 Uncertainty - it might happen.
14 Understanding is suspended.
15 Meaning is also atomistic - each of the facts and figures.
16 The learner's focus is on the link at the level of strategy.

As explained in Chapter 4, this case is a fictionalised example that was constructed from the data of participants that contributed to the description of this experience.
Teaching? I think if you've got a bad teacher it is very hard to learn anything. Good teachers and teaching techniques they're able to give you the understanding and the meaning and the knowledge. They don't just give you the single facts they give you all the meanings and the linkages and they help you understand it right then and there - they're able to tie it all up. 17 The source of relations between and meaning of parts of knowledge is the teacher.

General Observations on Case:

- Frustration and lack of confidence: "I don't give ...what they want;" "I don't think I've got them right yet;" "I've found that I can't analyse very well;" "I seem to fall down. I don't give them as much information as they seem to want;" "I just don't do it the way I'm supposed to;" "I'm still unsure of it to actually put it into practice;"
- The atomism implied in the language that is used: "the facts and figures;" "little bits of information here and there;"
- Understanding is achieved after the separate parts are memorised: "step one is to learn it and then step two is to link it together and then you have the knowledge and you understand;" "I guess you've got to learn all the information first before you can actually link it together and get understanding;" "you've got to know the meaning of each of the facts and figures."
- External agent is responsible for what is learned and understood: "They give you the facts;" "understanding is grasping what that person is trying to say;" "you have knowledge of their understanding;" "they're able to give you the understanding ... they're able to tie it all up."
structural relations of the act of learning, an example of how the object of learning is typically understood by the learner, and a discussion of the relation between act and object.

**Gaining Knowledge: The Referential Aspect of the Act of Learning**

Case 5.1 shows that the focus of learners who conceptualise learning as gaining knowledge, is the actual acquisition or increase of information. The referential aspect of learning is: "...being able to absorb information." (Margaret, 91/43/A); to "...gain a knowledge of it..." (Jan, 91/84/B); "...gaining, or the process of gaining more knowledge..." (Paul, 91/53/A); "Just increasing your knowledge..." (Paul, 91/55/A). These students emphasise the process of absorbing or increasing or gaining. Metaphorically, they consume knowledge: "...to fill in..." (Margaret, 91/41/A) and "...[you] just suck it in and keep it there..." (Dennis, 91/40/A).

Students, who understand Learning as Gaining Knowledge talk of learning indiscriminantly, what is prescribed for them or presented to them. Their focus is the accumulation of knowledge. Knowledge is conceptualised as "information," "facts and figures," or "bits and pieces" which appear as flat, 'side-by-side' associations. Case 5.1 provides a visual picture of this quantitative view of knowledge. It is understood to have a concrete, external reality. For example, "...once you've learnt... It's a knowledge then." (Paul, 91/54/A). Jan's description of understanding illustrates the way in which these learners absorb: "[it's] grasping what that person is trying to say. ...if you understand what they're trying to say ... you have knowledge of [their] understanding." (Jan, 91/80 - 81). The learner's conceptualisation of meaning is consistent with this interpretation. Meaning\(^2\) is associated with the linking of knowledge but the learner focuses on the separate meaning of each link or piece. Table 5.2 provides a summary of the way in which learners understand the referential aspects and structural relations of the phenomena that make up this experience.

**The Structural Relations of Learning as Gaining Knowledge**

Table 5.2 also summarises the structural relations of the experience. What is learned is acquired through memorising which is understood as repetitive absorption: putting things into memory by reading and re-reading or writing things out: "I write it down. ... I just write down things over and over ... so it goes into

\(^2\) In the interviews, students who experienced Learning as Reproducing did not use the word meaning spontaneously so they were asked what meaning meant for them.
my memory." (Jan, 91/110 - 111/B); "Learning it is just parrot fashion..." (Dennis, 91/60/A). What is learned "...goes into memory..." (Paul, 91/86/A); "...[you] keep it there and retain it." (Dennis, 91/40/A). The outcome of having learned, as the act of 'knowing,' is "having knowledge" (Paul, 91/71/A); having "...certain things that you can hold in your memory..." (Jan, 91/69/B). It is information that is stored or held in the brain as a "...knowledge base..." (Dennis, 91/33/A).

Table 5.2: The Referential Aspects and Structural Relations of Learning as Gaining Knowledge

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>To gain more knowledge by passive absorption or repetition.</td>
<td>Indiscriminate accumulation of knowledge whose use is suspended until you know a lot.</td>
</tr>
<tr>
<td>Memorising</td>
<td>To accumulate words and given relations to memory.</td>
<td>To memorise more and more information until you know a lot.</td>
</tr>
<tr>
<td>Remembering</td>
<td>To recall what was learned.</td>
<td>To remember the facts and figures memorised relations that were memorised.</td>
</tr>
<tr>
<td>Understanding</td>
<td>To know a lot by taking in the links at the level of word, or memorised concept.</td>
<td>Learned facts and figures are linked together. You know the links after you have learned a lot.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Separately conceptualised.</td>
<td>You must learn—memorise the facts before you understand.</td>
</tr>
<tr>
<td>The nature of meaning</td>
<td>The given meaning—vague and general.</td>
<td>The meaning and connections are provided.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Vague, and general, true and concrete.</td>
<td>Facts, figures, and procedures are parts that are learned separately.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Parts and connections that can be memorised.</td>
<td>Flat, undifferentiated 'side-by-side' associations.</td>
</tr>
</tbody>
</table>

In comparison to later experiences, the act of Learning as Gaining Knowledge is simple and uni-directional. The outcome of absorbing information is the storage of information. There is only a vague and general reference to the use of what is learned. If use is mentioned it tends to be seen in linear terms - an input/output activity: "I'm pretty good at absorbing information and giving it out..." (Margaret, 91/30/A). Or, it is associated with understanding. However, learning and understanding are conceptualised quite separately. Remembering, although rarely mentioned, is understood as recalling the learned material as memorised entities and their given relations. Memorising and remembering are not actively distinguished. Table 5.2 not only provides a description of the different phenomena but it also shows their congruence—the consistency with which the meaning of the different phenomena complement each other. The way in which the different parts are structurally defined one with the other demonstrates the internal relatedness of the experience.
Understanding as Linking, Using and/or Applying

The key to the meaning of this experience lies in these students' views of the relationship between learning, understanding and applying, and their experiences of agency. In *Learning as Gaining Knowledge*, learning is conceptualised in terms of absorbing while understanding is "...utilising the knowledge." (Margaret, 91/57/A). For example, for Margaret learning is to know "...the information and linking it to itself and to other ... things. ...being able to use it" (91/44 - 45/A). On the face of it, "...being able to use it." could be interpreted as a feature of the more developed, *Learning as Relating* (cf. Chapter 6) because for Margaret, the meaning of "fitting" (91/43/A) and "linking" (91/44/A) is "...being able to use it..." (91/45/A) or "...putting it into practice..." (91/48/A). However, further exploration reveals that *use* is associated with understanding rather than learning. Understanding is "...more than learning, it's being able to really utilise what you learn and relate everything together so that nothing's isolated..." (Margaret, 91/57/A); "...understanding is more where you can apply it..." (Paul, 91/84/A). Margaret clarifies the relation between learning and understanding:

Well I know lots of things. ...I've got a lot of information stored in my brain but whether it's of any use ... whether I can actually relate it to anything else, to make it of any use. I think that's where understanding comes in, actually taking those little bits of learnt information and doing something with them... (Margaret, 91/60/A, her emphases).

She added: "...I guess you've got to learn all the information first before you can actually link them together to understand them. So it's sort of like step one is to learn it and then step two is to link it together." (91/62/A). This internal relationship is shown in Table 5.2. It is explored further in the sections below.

Applying Suspended

Further analysis of the relationship between learning and understanding shows that Margaret's step two is not a figural aspect of her experience. For example, when she was asked if she had been able to use what she had learned, it became evident that she was uncertain: "I'm still unsure of it to actually put it into practice..." (Margaret, 91/49/A). Her response implied that she could see how it might be applied in the future. For Paul and Dennis also, understanding as putting something into practice was not a figural aspect of the experience: "...all you're really interested there [at university] is passing the exam..." (Paul, 91/73/A); to learn or to "...have a knowledge..." (Paul, 91/86/A) of something is to memorise
and "...that's good enough to put on an exam paper" (Paul, 91/90/A); "...understanding doesn't cop much with learning..." (Dennis, 91/59/A); and, "...parrot fashion's really good for exams. Understanding isn't all that necessary in tests" (Dennis, 91/62/A). Margaret provided another dimension: "...you've got to understand a lot about a lot of areas before you can put into practice what you know" (Margaret, 91/57/A).

The picture gains more clarity in an examination of these students' understanding of who is responsible for their learning: the idea of agency. In this experience, relating, and linking are understood to be the role of an external agent and the learner absorbs the information: "...we ... get presented with..." information (Margaret, 91/41/A); the teacher "...lectures, ... and I just sit there and take notes" (Jan, 91/106/B). For Margaret and Jan it is others' understanding that is gained or absorbed: "...you gain a knowledge of it ... you have knowledge of [their] understanding..." (Jan, 91/84; 8 103). Case 5.1 provides an illustration of the way in which this relation is understood. For example, "...basically you learn some facts from different areas and usually the lecturers ... tie [it] up..." (Margaret, 91/38/A). The fact that "linking" the pieces of information is understood to be separate from the act of learning as absorbing explains why learning and understanding are seen also to be relatively separate. The relationship is demonstrated in Figure 5.2.

**Figure 5.2: Structural Relations of Learning As Gaining Knowledge**

In summary, understanding is temporally suspended if it cannot occur until information is linked together in a lot of areas. If application as relating and putting it into practice relies on understanding "...a lot about a lot of areas..." then the
necessity for suspending understanding also applies to the use of knowledge. The learner appears to be waiting to understand and apply. The nature of this temporal suspension also explains the static quality of this view of learning.

Gaining Knowledge: The Object of Learning and its Relation to the Act

Like other experiences of learning that are described in this study, the nature of the object of learning matches that of the act. For instance, Paul was asked to give an example of something he had learned:

Skinner's conditioning where he says that if you reinforce a behaviour then the probability of it occurring again will be increased by punishing. And you've got the little squares and in each square you've got um, I don't know the first square. I don't know, let me think, hang on. Yeah you've got your positive reinforcement and your negative reinforcement and then time out and punishment... (Paul, 91/43/A)

Paul tries to remember as much as he could of what he had learned of Skinner's conditioning. In his recall he conflates content and strategy. The act of Learning as Gaining Knowledge is concerned predominantly with repetitive memorisation. Nevertheless, in much of what they say, these students sound confident. However, the data suggest that they lack confidence in their ability to learn: "...the fact that I've rarely studied ever means I find a great deal of difficulty studying at all." (Dennis, 91/67/A); and, "...with my lecture notes, I tried to get down the main points and then study from them [but] I found my lecture notes were pretty horrid and it's best if I just study straight from the text book. ...I just sit down and ... go over it a couple of times and hope it sinks in." (Paul, 91/26; 95/A); "...I never take good tests." (Dennis, 91/48/A); "I seem to fall down..." (Margaret, 91/27/A); I don't think I've still got them right yet..." (Paul, 91/25/A); and, "I've got a certain amount of information out but not the information they wanted and so I lost a lot of marks..." (Margaret, 91/29/A).

These learners seem remote from, and have little involvement in making either connections to or personal meaning of the knowledge that they learn. Their experience seems to be "hit and miss" or indiscriminant. For them, knowledge is a prepackaged entity that can be absorbed and the intention of learning is to fill gaps in the knowledge. The problem is conflated by the fact that their idea of the structural boundary of particular knowledge is very vague and general yet, paradoxically, they understand knowledge to be true and concrete. Thus there is a sense of finiteness about what can be learned in the sense that once it is learned
"you know it" yet the notion of accumulating a lot of knowledge before one understands contradicts this idea.

**Learning as Reproducing**

In *Learning as Reproducing* there is a change of focus. In contrast to the previous experience where learners emphasised *gaining* or *taking in* knowledge, this experience of learning is concerned with remembering and reproducing what has been learned. Where previously the acquiring phase of learning was emphasised, in this experience its use becomes more figural. Learning is acquiring new knowledge that was previously unknown, remembering it and telling someone about it. This reproductive act is aimed most often at assessment tasks. In keeping with this view, students' responses to my request for an example of something they had learned were often reproductions of a learned response about a topic. The act and object of *Learning as Reproducing* are summarised in Figure 5.3. The figure shows a coherent internal relationship between the main referent: *to remember and reproduce*; the structural aspect, *to commit something to memory*; and the object of learning as information that is reproduced in narrative form.

![Learning as Reproducing Diagram](image)

**Figure 5.3: The Act and Object of Learning as Reproducing**

This experience is fully illustrated in Case 5.2.
Case 5.2: Learning as Reproducing

Oh we've done this but I can't think of the word. Learning is psychologically when something changes in your brain, when the cells change. It's being told things about something new and interesting and it peaks your attention and you put it into your memory. You know you've learned it if someone asks you about it and you can remember it and tell them about it. Like I could tell you about pheromones when you asked for an example just now because I learnt all the details of it for an exam and it was the easiest thing for me to remember.

You hear something in lectures and you just soak it up and hope it goes into your memory. Like when you go to write an essay, reading tons and tons of books on it so when it's triggered, when you see the question in the test all those things that you've soaked in come out and you can write it down, hopefully in the right way, that they want. I suppose if it's important to you and you want to remember it then you've got to work at it and commit it to your memory. If you're trying to learn it, you'll look at it again and again and it'll get stuck in your memory so you can remember it.

I suppose understanding's having a grasp of it. It's more than knowing the facts, it's knowing the idea behind it, knowing the facts sufficiently to be able to explain it to somebody else, same as my definition for learning. I mean, you can learn something by rote like one by one and being able to repeat it or you put it into your own words and rearrange it all. Then it sinks into your memory more because you understand the concepts behind the facts. Like all the facts join together and you remember it as a concept rather than individual bits and pieces. They're all easier to remember than disjoint words that don't mean anything to you. It makes memorising a lot easier and you'll remember it a lot longer.

Note:
1 Typical attempt to reproduce.
2 External agency - learning is triggered by an external source.
3 You can reproduce it.
4 Reproducing is 'telling.'
5 Passive form of acquiring - you soak it up.
6 Agency: it is reproduced in the way they want it.
7 Active form of acquiring: you commit it to memory.
8 Verbatim memorisation.
9 Learning and understanding are similar.
10 Reproductive understanding.
11 A concept is facts joined together.

This case is a fictionalised example that was constructed from the data of participants that contributed to the description of this experience.
I memorise and understand it. Like I copy out my lecture notes and later when it comes to the exam I read them and just write down like the first word of all the points. Then I'll close my books and look at it and see if I can say all the points by just little meaningless things that don't give me clues on the rest of it. I just see if I can remember it all and explain it. Sometimes I read the references and note-take from the references. I don't just skim through the words. I'll absorb it all and comprehend it while I read. Then I'll take notes from it so that when I see the notes it reminds me of the concepts, and that way I've memorise it but I've taken the trouble to understand it as well which makes it easier.  

Meaning is what you're supposed to get out of it. The writer gives it a certain meaning and you can look at the headings and you know basically what the topic's about. Certain things only have one meaning and that's just the way it is. You read it through and highlighted words or italicised words show that bit's important. The summaries will give you the main points. I may use their summary or I'll go through and make my own and that way it's more applicable to the way I've read it, so that I can understand it and learn it and remember it a lot more easily.

Knowledge is what you've learnt, a big bank of everything you know and remember. It's knowing a lot of things, a lot of concepts and facts and meanings. Each piece has its own meaning and knowledge is a collection of your meanings.

General observations on the Case:

- Focus on remembering and reproducing as "telling" or "explaining" is apparent both implicitly in the act of telling me about learning of pheromones, and explicitly as the focus of the narrative: "you can remember it and tell them about it."
- The case reveals two forms of Learning as Reproducing: the passive "soak it up," and "it'll get stuck in your memory," "all those things you've soaked in come out;" and the more active, "work at it," and "commit it," "I'll absorb it all and comprehend it."
- Predominant focus on repetitive memorising strategies: "say all the points;" "reading tons and tons;" and "you'll look at it again and again."
- The strong notion of external agency: the lecturer, author or knowledge "peaks" the learner's attention and learning occurs; remembering is cued by external events "the question or the notes;" it is the concept that conveys meaning; "The writer gives it a certain meaning."
Reproductive Experiences of Learning: Learning as Reproducing

Reproducing: The Focus of the Act of Learning

Case 5.2 presents a general picture of a learner whose experience of learning is acquiring knowledge that was previously unknown and being able to remember it and tell someone about it. The Case shows how this theme of telling or reproducing is evident throughout the act of learning. Acquiring knowledge occurs through the act of repetition and being able to reproduce. Knowing is understood in terms of having the capacity to reproduce. The outcome or use of learning is being able to reproduce what was learned. Understanding is also associated with reproduction. These students' understandings of acquiring and knowing are more fully reported in the description of the structural relations of this experience and summarised in Table 5.3.

Reproducing is experienced as writing, telling and/or explaining, and the learner knows that learning has occurred when the material can be remembered and explained. For example: "...if someone asks you about them you can remember them and tell them about it..." (Emily, 91/27/B). Moreover, Case 5.2 shows how the focus on telling or explaining is repeated in these students' conceptions of understanding: "Understanding is more than just knowing the facts, understanding is ... oh, being able to explain it to somebody else, same as my definition for learning." (Emily, 91/43/B). Likewise, for Alison, understanding is "comprehension of what it is. ... if you understand, then you can explain it to someone else." (Alison, 91/62/B). In all of these examples, the learner's focus is on the strategy of explaining (the act) rather what it is that is explained (the object). Emily was asked what it was about being able to explain that makes the knowledge understood. In her response she emphasised explaining:

...if you can convey the ideas to somebody else so that they can grasp it, ...you can't just give them the facts ... that's not enough, you've got to have more of a knowledge of it than just the facts. You've got to have understood it to be able to explain it to somebody else." (Emily, 91/44/B).

It is the act of reproducing that indicates to the learner that knowledge is learnt or understood. The referential aspects and structural relations of Learning as Reproducing are summarised in Table 5.3.

Table 5.3 shows how the nature of what is reproduced or explained is either what is "learned" as verbatim recall of facts, that is, at the level of word or formula, or what is understood as "...the facts join[ed] together..." (Emily, 91/47/B). This distinction is explored further in the description of the structural aspects of the
experience. Both products are memorised reproductions of knowledge prescribed from an external source. For example, knowledge is: "...knowing a lot of things. Knowledge is knowing a lot of concepts and facts and meanings. ...Knowledge is what you've learnt ... all the things that are in your memory..." (Emily, 91/56 - 57/B); "...it's theory and you have to go by it." (Paul, 92/84/A). Like *Learning as Gaining Knowledge*, this view of knowledge is atomistic. Students talked of "...piece[s] of knowledge..." (Emily, 91/59/B); concepts that comprise "...facts join[ed] together..." (see Emily above). In line with the reproductive nature of the experience it tends to be described as knowledge that can be remembered. In this view of learning knowledge has a concrete external reality. Table 5.3 shows how the meaning of each of the phenomenal aspects of the experience are integrally related to each other.

Table 5.3: The Referential Aspects and Structural Relations of *Learning as Reproducing*

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>To absorb and/or commit words and/or formulae to memory in order to reproduce it by telling or explaining.</td>
<td>Reproduction as repetition of the word or formula and/or given meaning until one remembers.</td>
</tr>
<tr>
<td>Memorising</td>
<td>To remember by committing words of formulae to memory and/or meaning to memory.</td>
<td>Passive absorption and/or purposeful repetition in order to reproduce of learned material.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Remembering the given structure, the facts and figures and how they link together.</td>
<td>Remembering as reproducing the memorised knowledge is triggered (by the question or task).</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing the way in which things are joined together and/or the idea behind it in your own words.</td>
<td>You can convey it to someone else so that they can grasp it. You remember at the level of word, or concept: all the facts join together.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Learning means that understanding has occurred</td>
<td>Not discriminated, understanding is subsumed in learning, therefore learning is understanding</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>What you're supposed to get out of it, given why - how it came about</td>
<td>Seeking the author's or speaker's organising cues.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>What is learned as the atomistic, concrete, prescribed meaning.</td>
<td>You seek the intended (i.e., prescribed) meaning.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Simple, flat 'side-by-side' structure but differentiated.</td>
<td>Views knowledge as connected and seeks the given connections.</td>
</tr>
</tbody>
</table>

**The Structural Relations of *Learning as Reproducing***

The key to the structure of *Learning as Reproducing* is the cyclical way in which remembering and memorising are related to reproducing. Learning is experienced as memorising, remembering and telling, either to explain something for a test situation, or to tell and repeat something in order to learn (usually for assessment
Reproductive Experiences of Learning: Learning as Reproducing

This last characteristic represents an important shift in emphasis from Learning as Gaining Knowledge. Repetition in order to learn changes the previous more linear, uni-directional experience, into a more circular albeit relatively closed, repetitive loop. Nevertheless, in comparison with later experiences, students make little distinction between remembering and memorising. Repetition as the act of 'using' or reproducing what is learned and repetition as the acquisition of knowledge are indistinguishable acts. For example, Alison sees remembering in relation to how knowledge is acquired: "...so remembering is ... if it's caught your attention and if it's going to stay there." (Alison, 91/63/B). These structural relationships are shown in Figure 5.4.

Learning as Reproducing

![Diagram of Learning as Reproducing]

Figure 5.4 The Structural Relations of Learning As Reproducing

Two distinct, but integrally related forms of Learning as Reproducing are evident in the data. They both evince the structural circularity shown in Figure 5.4. However, they differ from each other in terms of how knowledge is acquired, and what is memorised and reproduced. They are described in the sections that follow.

Learning as Absorbing and Reproducing

The first form is characterised by Alison's "...if it's caught your attention..." (91/63/B, above). Acquiring what is learned seems to occur by happenstance: "...your interest is peaked..." (Alison, 91/41/B); "...you learn it ... because it's
something new and interesting ... it peaks your attention." (Alison, 91/54/B). However, Alison relies upon the knowledge, teacher, or text to "peak" her attention. Case 5.2 provides further illustration of this experience. The manner of acquisition resembles the passive absorption of Learning as Gaining Knowledge. Consumption metaphors that characterised the previous view of learning continue to be part of this experience. By reading "... tons and tons of books on it..." the student soaks in all the information. So "...when you go to write the essay all those things that you've soaked in come out..." Most often recall is passively cued or triggered by external events such as the lecturer or the test question: "...when you see the question and that's the trigger then you ... can take out all you've soaked and write it down hopefully in the right way that they want." (Alison, 91/59/B). Reproducing is: "...you can explain it to someone else..." (Alison, 91/62/B).

Like that of Learning as Gaining Knowledge, this act of learning is strongly dependent on external agency. For example, lecturers "...just don't keep the attention..." (Alison, 91/39/B); "...if your interest is peaked ... like I'll go home and tell my boyfriend , oh guess what... [but] if the lecturer has been really boring I can't remember it later on. ...it doesn't stick in my mind..." (Alison, 91/41/B). These students think of learning as an experience driven by external sources: acquisition depends upon the level of interest that the knowledge, teacher or text evokes in the learner, and its recall depends upon an external trigger.

Reproducing Verbatim and/or Reproductive Understanding

The second form of Learning as Reproducing involves committing something to memory in order to reproduce it. Learners see themselves as more active participants in the process: "...you put them into your memory..." (Emily, 91/27/B); "...taking on some new information..." (Lydia, 91/69/A); and, "...you commit it to memory..." (Emily, 91/46/B) in order to remember. In this form of Learning as Reproducing, knowledge is acquired through either verbatim memorisation and recall of facts at the level of word/formula, or the memorisation of the given meaning. Emily distinguishes the two experiences: "You can learn something by rote ... learning them one by one and just being able to repeat them" (Emily, 91/45/B), and "...looking at it again and again..." (Emily, 91/46/B); or, "...you can put it into your own words and rearrange it all and if you understand it you'll remember it a lot longer than if you just rote learnt it. ...it sort of sinks into your memory more because you understand the concepts behind the facts..." (Emily, 91/45/B). Emily provides an example:
Reproductive Experiences of Learning: Learning as Reproducing

I'll write ... out [my lecture notes]. I don't pay any attention when I'm copying them out but when it comes to the exam, I'd read [them], read the references and note-take from the references and that way ... I comprehend it while I read. I don't just skim through the words. I'll absorb it all and comprehend it and then I'll take notes from it so that ... [they] remind me of the concepts, and then I'll learn. Like often I'll read my lecture notes and then those again and then I'll just go through on a piece of paper and just write down like the first word of all the points. And then I'll close my books and ... see if I can say all the points by just little meaningless things that don't give me any real clues on the rest of it and see if I can remember it all then explain it (Emily, 91/50/B).

The first experience comprises a version of verbatim acquisition and reproduction. What is reproduced are the given words or formulae. For a description of the second experience, I appropriated the term reproductive understanding on the basis that despite the "rearrang[ing]," what is reproduced is the given meaning. In both approaches, students use repetitive strategies to learn. Like the earlier experience, remembering and reproducing are understood in terms of something triggered. Remembering is cued by external sources like the test question, essay or teacher. However, like the more active acquisition there is also evidence of more active participation in the act of remembering. Learners adopt external cues to remind themselves of the information: using examples to remember the theory, "...I'd remember the examples, and then I can relate the theory back to things" (Paul, 92/99/A); remembering the discussion, person or the situation in which the information was understood, "...you remember that because of what happened" (Alison, 91/74). Yet the focus of remembering is on the strategy that allows remembering to occur rather than what it is that is remembered.

Students consider verbatim acquisition and reproduction to be less effective than reproductive understanding because "rote" learning is not remembered for very long. Both approaches tend to involve the relatively unfocused and indiscriminate acquisition of information that is provided and so both experiences tend to lack reference to structure or organisation. Like the more passive experience, acquiring knowledge depends on sources external to the learner.

The Nature of Reproductive Understanding

Unlike later experiences, in Learning as Reproducing understanding is conceptualised in a vague and general way. Understanding is: "...more than just knowing the facts, understanding is being able to explain it to somebody else..." (Emily, 91/43/B); "a better knowledge ... Greater" (Lydia, 91/102/A). On the face of it, the view of understanding represented in Case 5.2 appears to be more complex.
than this experience or the kind of reproductive understanding that is described in the section above. For example the phrases: "...you understand the concepts behind the facts..." (Emily, 91/45/B) and "...how they came to that theory..." (Alison, 91/60/B) implies a search for substantive meaning. However, these students understand a concept as facts joined together. For example, "...understanding makes ... memorising a lot more easy because all the facts join together and you remember it as a concept rather than individual bits and pieces" (Emily, 91/47/B). This idea of concept as "...the facts join together..." bears a close resemblance to the notion of understanding as linking in Learning as Gaining Knowledge.

Despite the apparent differences in these students' views of learning and understanding there is a conceptual similarity. Understanding is seen to be synonymous with learning: "[understanding is] ...same as my definition for learning" (Emily, 91/43/B).4 The relation between learning and understanding is summarised in Table 5.3.

**Passive Absorption or Active Memorisation**

Students' reliance on absorption or the use of the more active "committing" to memory appears to be dependent on the circumstances in which something is learned, for example, the level of difficulty and the perceived importance of the topic. They distinguish both forms and move freely between them.5 Moreover, they often include both forms in their descriptions of an example of a single act of learning. Emily demonstrates this in the passage below. She also illustrates the way in which memorising and remembering are related:

You hear something and it goes into your memory, like it goes into your brain and if you place any importance on it, you commit it to your memory I suppose. ...you can see a lot of things and hear a lot of things and ... if you want to recall them a short time after you probably can. But ... if you're trying to learn it, you'll look at it again and again and it'll get stuck in your memory so you can remember it (Emily, 91/46/B).

**The Reproduction of Meaning**

There are two characterisations of meaning in this view of learning. The first is the literal prescribed meaning of the word or concept or the meaning provided by a text, author or teacher. Meaning is associated with actual definitions, the meaning of

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4 For Emily, learning is: "...if you can explain it to someone else ... you've learnt it." (Emily, 91/28/B).
5 This movement suggested that the two forms should be treated as a related whole. This is in contrast to experiences in later chapters where variation in form is treated separately.
"big" words provided by a dictionary, or the organising cues of text headings and other structural mechanisms in order to derive the given meaning from texts. "Meaning is what ... a concept's supposed to convey, what you're supposed to get out of it" (Emily, 91/51/B). Emily explained: "...the person writing the book ... the way he explains it, he's trying to give a certain meaning, certain things have one meaning, that's just the way it is. ...whoever's telling you is the one deciding the meaning..." (Emily, 91/53/B). This characterisation of meaning is illustrated in Case 5.2. There, the learner illustrates how the organisation of the text is used to establish "...what you're supposed to get out of it" (cf. Svensson 1976). The learner may summarise the text in her own words. In the context of this experience, to summarise is to paraphrase the author's summary.

The second form of meaning is associated more with why, at the level of word or the purpose or justification for something. This conceptualisation of meaning is synonymous with purpose: "why are we doing this." The why is the given why. For example, "...why, for instance, psychologists study the infant's mind and why they didn't used to and stuff like that" (Alison, 91/80/B) and "...what is the meaning of this word? ... Why does that word describe that meaning, that definition kind of thing. You want to know why they're together" (Alison, 91/78/B). So, meaning is conceptualised in terms of the structural link—why something is placed with something else. This conception of meaning is more figural in experiences of Learning as Relating.

Reproducing the Object of Learning: its Relation to the Act

In Learning as Reproducing, learners are concerned with recalling and telling or explaining what has been taught. As an example of learning, Alison suggested that she explain what she had learned about the brain:

...there's just so many (laughter) I could talk for ages about this. ...there's a theory that cot death is a result of you know the babies ... if you don't have enough. Babies need more active sleep than quiet sleep. And if they don't think that they're getting ... With babies there's a theory that if the mind doesn't think that it's ... going to get any active sleep then it will shut down and that's what cot death is. ... Then there's all these theories about some virus and if you sleep them on their belly and stuff like that. I don't know about them. ...our lecturer told us [about this]. ... He'll give us the straight lecture topics ... that he's set down for himself to lecture about but at the same time he has by-the-ways... I think that was a by-the-way yeah. I don't think that was something that we'll be learning for, on the test. ...but because it's a by-the-way related to what we're doing it keeps you remembering about the body that there is say twenty minutes of quiet sleep and fifty minutes of active sleep, where you dream and that. And that when you dream ... active sleep
your throat muscles are all relaxed ... they're all things that are tied to it. That's why you remember ... [and] because I remembered telling my boyfriend last night (Alison, 91/44 - 46/B).

In this passage Alison tells me what she can remember and she describes what she has learned indiscriminately. Initially, she selected the brain as an example of something she wished to talk about, but what she makes figural is the lecturer's example of cot death. She appears not to distinguish detail and concept. She focuses on the lecturer's examples as "by-the-ways" (what is not to be assessed) rather than a relation between sleep as a phenomenon and possible sleep pathologies. What she remembers is organised according to her understanding of the strategies involved. For example, she understands and uses "by-the-ways" as strategies to remember substantive content. She makes what she perceives to be the lecturer's intended link between the example of cot death and sleep but she focuses on the example. Finally, she emphasises what she can remember and reproduce.

**Learning as Reproducing: a General Comment**

The problem of suspended understanding (needing to know "a lot about a lot of areas before you can understand") that was a feature of *Learning as Gaining Knowledge*, is now resolved. Reproducing or "taking it out" is "triggered" if sufficient knowledge has been absorbed. This phenomenon of "telling" or "explaining" was illustrated many times in the interview situation.

In *Learning as Reproducing* students show little variation in the way in which they learn. Their rationale may be associated with the fact that repetitive memorising strategies work for them. However, they are aware that other students used different approaches. For example, Paul stated:

...you can memorise it without understanding it. ... I think that's just one way and there is perhaps other ways like I know a couple of people [who] mind map ... that's more of a physical representation of the information ... they write on a piece of paper, like they'll write whatever they're talking about and then draw little legs off that and whatever it leads into, and they'll see that map and be able to trace it in their mind. ... I don't do it. I don't know if I can. I don't particularly want to risk doing that in [an] exam and ... finding, oh I can't do it, and failing the exam. But I wouldn't mind giving it a go (Paul, 92/113-115/A).

Despite his awareness that the use of mind map involves a different approach (physical representation), Paul understands it from his experience of *Learning as Reproducing*. He sees it as a repetitive memorising strategy. It is as if the way in which Paul conceptualises learning as remembering *for the exam* controls his access
to other strategies. The adoption of a different approach is a risk he is not prepared to take because of the possibility of failure. He gives himself few choices and in consequence he has a limited repertoire of approaches.

Reproductive Experiences of Learning—A Summary

To recap, the two experiences of learning described in this chapter are closely linked by their very general and reproductive characteristics. Learners assume that the relations between different aspects of knowledge will be made and supplied by an external source. Thus, the meaning of the knowledge is not contested—it is a given. They also, as we saw with Paul in the section above, rely on assessment to dictate how they go about learning. However, there are also differences. There is a shift in emphasis. Learning as Gaining Knowledge is concerned with taking knowledge in and Learning as Reproducing focuses on remembering. This not necessarily a shift in the poles of a temporal dimension from acquiring to using knowledge (e.g., Marton, Watkins & Tang, 1997). Rather, as the relations and connections become evident to students, and their experience of knowledge becomes more differentiated, they start to seek the given connections between the parts. There is also a change in temporality from the suspension of understanding that is evident in Learning as Gaining Knowledge to a more circular structure in Learning as Reproducing. What is important about these experiences is that learners intend to understand. However, their notion of understanding as reproduction constrains the experience. Nevertheless, there are hints in these experiences of the more relational experiences reported in Chapter 6. The circularity of Learning as Reproducing is a necessary aspect of Learning as Relating: Remembering How. The focus on repetitive, procedural organisation that is required to reproduce the given meaning appears to become an integral aspect of Learning as Relating: Remembering How.
Introduction

The two experiences of learning that were described in the previous chapter showed a qualitative shift of focus from a view of learning that emphasised acquiring knowledge, to one in which remembering and reproducing predominated. A less emphasised aspect of those experiences was concerned with understanding as linking, using, or applying knowledge. It is this idea of relating, applying or using knowledge that is the dominant theme of the experiences described in this chapter. Three distinct experiences in which relating knowledge is a dominant theme, were evident in the data:

- Learning as Relating: Remembering How: relating as memorised practice, remembering how to do something, remembering and using the sequence or steps;

- Learning as Relating: Knowing Why: relating knowledge in an informed way, using the knowledge purposefully and knowing why something is done, knowing the cause and effect; and,

- Learning as Relating: Understanding Where: relating knowledge to new situations, different contexts and understanding situations in which knowledge might be applied.

The focus on remembering and reproducing that was evident in Chapter 5, continues to dominate the first experience. It is also evident in the second where reproducing is now linked strongly with remembering how or knowing why. In the third experience the idea of reproducing is less prominent.

The Significance of the Variation in Experiences of Learning as Relating

In the description of Learning as Reproducing, that was a focus of the previous chapter, reference was made to the existence of different forms that were integrally related in the one experience. For instance, learners often described both forms within a single example and appeared to move from one to the other
interchangeably. Thus, the decision to treat them as an integrated whole experience was dictated by these characteristics.

Within the group of experiences described in this chapter, the situation differs. Although these three experiences exhibit some common characteristics and show evidence of being thematically related, each experience also differs from the other in its central referent and temporal emphasis. For instance, in all three experiences it is evident that the learner understands learning in terms of how different aspects of what is learned are related. Yet, each of the three experiences comprises a qualitatively different notion of relating. In Learning as Remembering How, the embryonic form of relating is remembering the steps. In Learning as Knowing Why, relating is associated with making relations between new knowledge and previous knowledge and to other newly learned material. In Learning as Understanding Where, relating refers to relating what is learned to new situations where it can be applied. Also, it appears that as these learners gain more insight into their processes of learning, there is a similar shift in their experience of relating knowledge. Table 6.1 shows this kind of progressive shift in focus—a shift that provides an informative picture of these learners' growing insight and awareness of the phenomenon of learning.

Table 6.1: Main Referents and Structural Relations of Experiences of Learning as Relating

<table>
<thead>
<tr>
<th>Experience</th>
<th>Main Referent</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembering how</td>
<td>Practice, remembering how to use/do it (the steps, procedures, or organisation) correctly. Accumulating technical knowledge.</td>
<td>Purposeful, repetitive practice of the sequence or steps (content, exercise, or example) in the same situation/context.</td>
</tr>
<tr>
<td>Knowing why</td>
<td>Cause and effect, informed practical application: using knowledge for its proper purpose, knowing how and why something is applied.</td>
<td>Procedural rehearsal and simple reflection on past experience and future use, transfer of application to, and practice in new situations.</td>
</tr>
<tr>
<td>Understanding where</td>
<td>Context of application, knowing how and why learning is applied, understanding where learning can be applied, knowing why it is relevant.</td>
<td>Relational, early relativism, applying knowledge in various circumstances, experimenting with different contexts, making associations.</td>
</tr>
</tbody>
</table>

These experiences are described in more detail in the sections below.
Learning as Relating: Remembering How

The learner's experience of Learning as Relating: Remembering How appears to be a more practical or technical enactment of Learning as Reproducing. Learning is characterised as utilitarian reproduction: remembering how to use it or how to do it. Learners know that they have learned when they can reproduce the practice. Case 6.1 illustrates the main features of this experience. The main features of Learning as Relating: Remembering How are summarised in Figure 6.1.

| Referential Aspects: remembering how to use/do it correctly; reproducing the procedures, organisation. |
| Structural Relations: purposeful repetition or practice of sequence or steps in order to remember. |
| Kolb's learning cycle is working through an experience, gaining information from it, learning the theory of why, and reflection, theory and planning. |

Figure 6.1: Summary of the Act and Object of Learning as Remembering How

Like previous experiences, Figure 6.1 shows how, in Learning as Relating: Remembering How there is a coherent relation between the main referent, the structural relations and the example of the object of learning, Kolb's learning cycle. When describing this example of the object of learning, the student explained it as a series of steps that were learned and reproduced.

The Referential Aspects of Learning as Relating: Remembering How

Case 6.1 illustrates the technical character of the main focus of this act of learning. In this experience, learners adopt a wider focus and understand learning in terms of practice. The main referent of the experience is to remember how to do it: "You know how to do it" (Jan, 92/38/B); or "...how it works" (Joel, 91/53/B);
Case 6.1: Learning as Relating: Remembering How

Learning is taking in knowledge you didn't know before and putting it to use, or eventually putting it to use. You can remember how to do it. You can explain to someone else exactly how it works so that they can tell it back the way you've explained it. You take in the information and then you reinforce it over a time. Like, I get a list of things and I read it into my mind a few times - basic memorising techniques. I make associations with other things, picture associations with what I'm trying to remember. A lot of the stuff is very logical but I've never had the words put to it so seeing something defined in words that you've been experiencing all the time makes it clearly established in your brain and then it's easier to remember.

Understanding's something you know you have. You can't ask someone, do I understand that? And people's understandings aren't all the same otherwise everyone would remember exactly the same thing and they'd all get the same marks. So my understanding is different from yours. I expand my understanding of situations when I actually get to put it into practice so I can see why something's happened. I think learning and understanding are a lot like the same thing. If I've learned something properly, I understand it, I know how to do it: I can follow the steps and procedures on my own bat. It's like a development, you know, building blocks. You put one brick down, you put the next one beside it, and you can now put another one on top of that - one plus one. Once you've got the understanding of that you can then do one plus two, and one plus three and upwards. Ideas or concepts or understandings, they enter the memory. All the inputs bounce off each other: one bit of information is put with another bit of information and then it's processed so there's a third bit of information that's just as important.

Note:
1 Utilitarian focus.
2 Repetitive memorising.
3 Absolute certainty of "you know you have."
4 The recognition of difference - early relativism.
5 Understanding depends on practice.
6 Similarity of learning and understanding.
7 Focus on steps and procedures.
8 Structure of knowledge is more than step-by-step connections.

Like the cases in presented in Chapter 5, this case and the others included in this chapter, are fictionalised examples that were constructed from the data of participants that contributed to the description of the experiences.
For example, we can learn about lesions of the brain by presenting images in different parts of the visual field and if it's not perceived we know that there's a lesion because I've been told what part of the brain controls what part of the visual field. I understand that because there's evidence of it in research and I can see the link. And it seems to me logical that if that particular part of the brain is damaged then you might not be able to perceive it.

I'm not sure understanding's directly connected to memory. I mean you might remember it for ten minutes and then it disappears but you remember there was something you understood and someone will bring it up and you think, yeah I remember that but you can't sort of tell them exactly what it is. I think to fully understand something you have to repeat it or keep asking questions and then you're able to find out how it works and sort of interacts with other things. And then it should go into your memory a lot easier.

Meaning? I suppose it's something that you can relate to your own experience of life or use it. Meaning and understanding seem to me to be well almost the same, it's the steps, the different steps. If you know the meaning you'll understand it and you'll learn it and you'll memorise it. That's important because if it doesn't have a lot of meaning it's very hard to memorise it and it's very hard to understand it. What is knowledge? It's the stuff that's stored in your brain. It's information that you've understood.

Note:

9 The use of examples.
10 The notion of the shadow of understanding. This gets developed in later experiences.
11 Continued focus on remembering and reproducing.
12 Knowledge and the process of learning as steps.
13 Reproductive nature of understanding - if you don't know the steps it's hard to memorise.

General observations on case:

- Focus on relating as remembering how: "putting it to use;" "You can remember how to do it;" "I know how to do it."
- Emphasis on relating/associating (direction from something that is learned to something learned at another time): "having the words put to it;" "I make associations with other things;" "be able to relate it to things that were taught some other time;" "I can see the link;" "you can relate to your own experience of life."
- Reproductive nature of learning and understanding: "I read it into my mind;" "basic memorising techniques;" "it's very hard to memorise."
- The sequential way in which both the process of learning and understanding, and knowledge itself is organised: "it's the steps, the different steps;" "I can follow the steps and procedures on my own bat;" "You put one brick down, you put the next one beside it."
- Building metaphor that suggests a move from linear side-by-side connections to structures that hint at organisation that includes superordinate and subordinate features.
"...learning is how to ... you haven't learnt something unless you can do it again ... reproduce it or recall it" (Andrew, 91/44/A, his emphasis). In this case "it" is what is learned and "works" refers to the organisation of the learned material, its sequence or relations. Learners focus on how to reproduce the process—remembering how. Case 6.1 shows the reproductive nature of the experience: "...if you can explain it to somebody then you obviously understand it" (Andrew, 91/67/A), and "...if you can follow the steps and follow a procedure without reading it or listening to somebody and then doing it ... then you understood it. You've drawn a relationship between [them]" (Andrew, 91/67/A). In this experience "relation" is associated with being able to link the sequence of steps, and learning is concerned with remembering and reproducing the given relation/structure of steps or sequence correctly in order to do it again. For example, "...if you understand what you've been taught ... you can use it correctly" (Dennis, 92/48/A).

The phrases, "...if I can explain it to somebody else..." (Margaret, 92/30/A) and, "...I can tell you exactly how it works" (Joel, 91/53/B) resemble the remembering, telling and explaining of Learning as Reproducing. However, the experience differs from the previous one in important ways. Reproducing is now associated with relating something or applying and the learner knows that learning has occurred if it can be explained and applied: "...put it into practice" (Margaret, 92/59/A). The main focus of learning is to remember how the material is organised: working out how to use it by knowing the sequence. For example, "...take some data and then manipulate it through the sequence of, like if we were talking about stats, is put it through the sequence and come out with stuff at the end that I can interpret properly" (Margaret, 92/30/A). The referential aspects and structural relations of the phenomena that make up Learning as Relating: Remembering How, are summarised in Table 6.2.

The Table shows that, like Learning as Reproducing, learners tend not to distinguish memorising from remembering. However, the meaning of these phenomena have changed from something that appeared to be relatively indiscriminate absorption or repetition, to a more purposeful act that includes a greater range of strategies than were evident in the experiences that were described in the previous chapter. For example, memorisation has now become a more pronounced form of rehearsal, that adopts a range of strategies: explaining, repeated questioning, repetitive activities, reading and rereading, working through statistical
examples, and providing examples. In parallel with the changes in memorisation strategies is a change in the experience of learning itself. For instance, "...learning is ...doing things in a routine, and if you don't do it in a routine, ... then you forget..." (Jan, 92/32/B). It is as if the awareness that what is learned can be organised or structured has shifted the focus of the experience from relatively indiscriminate telling or explaining to reproducing the given structure.

Table 6.2: The Referential Aspects and Structural Relations of Learning as Relating: Remembering How

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Remembering how to use/do something correctly—knowing the given structure, steps or sequence.</td>
<td>Memorisng the practices, by purposeful repetition or practice of sequence, steps or procedures in order to remember.</td>
</tr>
<tr>
<td>Memorising</td>
<td>To remember how to do it again. Rehearsing the given structure, steps or sequence.</td>
<td>Reproductive, repetition or recall of the practice, the 'how', the steps or procedures.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Remembering how to do it again.</td>
<td>Is sequenced, structured, organised - it has steps.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing the memorised process or steps, how it works, the idea behind it.</td>
<td>Recognising or working out the steps/structure.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Learning means that understanding has occurred.</td>
<td>a) Not discriminated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Learning comes before understanding.</td>
</tr>
<tr>
<td>Nature of meaning of knowledge</td>
<td>Memorisng the sequence.</td>
<td>The structure of meaning is given.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Accumulated blocks of knowledge as in building. Given information but uses building metaphor.</td>
<td>Building metaphor—knowledge can be actively ordered through step like procedures.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Parts are structured either linearly or as blocks (height implied).</td>
<td>Procedural additive accumulation of given meaning as linear connections between parts.</td>
</tr>
</tbody>
</table>

The Structural Relations of Learning as Relating: Remembering How

In terms of circularity, the experience of Learning as Remembering How resembles the closed loop structure of Learning as Reproducing. The emphasis on reproduction in order to know is more pronounced. However, the separate characterisations of acquiring, knowing and using that were evident in the previous experiences are not longer as clear. In this experience, learning as a repetitious act, and memorising how to do it is a circular process. The act of memorising depends on remembering and practice (see Table 6.2). The fact that you "...get to put it into practice..." (Margaret, 92/59/A) allows more knowledge to be acquired. The learner memorises/rehearses the remembered relations, steps or sequence, either in the head or as a practical act. Accordingly, memorisation is understood in terms of
Learning as Relating: Remembering How

how to do it or apply it. What is memorised is dependent upon its perceived use. For example, Mandy disliked statistics but she added: "I can't see how I'd use it..." (91/38). Margaret's "...they can relate it back to me the way I've explained it..." (92/30/A) illustrates the reproductive nature of this experience. These structural relations are shown in Figure 6.2.

**Figure 6.2: Structural Relations of Learning as Relating: Remembering How**

**Remembering How as Associating and Relating**

Figure 6.2 also shows a more tentative relation (hence the dotted lines) between remembering/reproducing and acquiring knowledge. In this experience, emphasis on sequence and procedure is accompanied by a notion of associating or connecting. These features are illustrated in Case 6.1. They appear to be an early expression of what students call making relations which is evident in Learning as Knowing Why and Understanding Where, and in Learning as Understanding. For example, a relation is made between one piece/aspect/part of a structure of knowledge and another: "...mak[ing] associations with ... objects..." (Margaret, 92/68/A); and "...mak[ing] connections between different things..." (Joel, 91/82/B).
There is also evidence of the awareness of how newly learned material is related to prior experience: "...seeing something defined in words that you've been experiencing all the time..." (Margaret, 92/59/A). Having "...the words put to it..." (Margaret, 92/59/A) provides meaning for the learner. New knowledge provides an explanation, label or a definition for things that have been done or have happened previously: a relation is made by applying the defining attribute to something that was previously known. "Defin(ing) in words..." is also an aspect of verbal rehearsal or practice, memorising meaning. However, what is made figural is recognition and definition rather than a central concern with meaning that occurs in later experiences. The learner centres on the practice of the knowledge—how to do it, rather than on what constitutes the knowledge—what it is. The referential aspects and structural relations of the experience are summarised in Table 6.2.

Remembering How—Understanding and its Relation to Learning

Understanding is experienced as knowing the process or steps, or the idea behind "it" in terms of the history or background of the knowledge—how "it" came about: "...knowing a bit about how to handle it or how it works. [For example] I understand how the legislation in work and health is used. ...I'm not very good at going through the act itself but I understand how they use it..." (Mandy, 91/72; 68/A). The data suggest that understanding is a learned (rehearsed) process of steps and "how to do it" or "how" it may be applied is knowing the steps. These aspects of understanding are summarised in Table 6.2. The learner's referent is understanding the procedure, the "...steps we've gone through..." (Margaret, 92/55/A); "...how something has happened or how someone's reached this conclusion..." (Penny, 91/111/A); rather than the knowledge itself. Understanding occurs by "...putting through a couple of examples..." (Margaret, 92/55/A), that is, rehearsal by using examples: a form of reproductive understanding.

There is also a focus on why: "...when I say I understand ... I can see why something has happened" (Andrew, 91/64/A, his emphasis). This experience resembles that of Learning as Relating: Knowing Why in which why refers to the underlying theory, or the raison d'être for the knowledge. Here, however, why is understood in terms of the association of the different parts of the material, the relations and the sequence of the knowledge or process of learning: "...why it

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2 Learning as Knowing Why is the second experience described in this chapter.
Learning as Relating: Remembering How

would happen..." (Penny, 91/112/A) or what relates to what, or what causes what. "See(ing) the relationship..." or "...doing it..." is associated with the notion of following the steps or procedures: the process of learning is interrupted if the sequence is interrupted.

...I'd like to know why and I can't really work it out down to the basic level because I can't understand the steps we've gone through. [Understanding is] ...something like the learning process ... if you're stopped any way along the process um, that interferes with your understanding of the whole thing... (Margaret, 92/57/A).

In Learning as Relating: Remembering How, students view learning and understanding as similar phenomena (see Table 6.2). Understanding is seen either to be subsumed in learning: "[t]o me they're a lot like the same thing. If you've learned something, you've understood it" (Margaret, 92/58/A); [Learning and understanding] ...almost have to be exactly the same. ...if you learn something you have to understand it otherwise you haven't learnt it (Joel, 91/83/B). Or learning leads to understanding: "...learning is the process you go through to enable you to understand something..." (Penny, 91/113/A). The fact that understanding and learning are seen to be relatively synonymous supports the notion that understanding is conceptualised in terms of the memorisation described above. Indeed, some strategies resemble those that were a feature of Learning as Reproducing where there was a focus at the level of the meaning of the word and a reliance on "it" sinking in. However, students also make distinctions between remembering a sense of something understood—the shadow of understanding and remembering something that was actually able to be repeated. The first is characterised by a level of awareness of understanding at a more general level. Full understanding requires work—repetition and rehearsal to reinforce understanding. These distinctions are significant given the nature of understanding in Learning as Relating: Knowing Why and Learning as Relating: Understanding Where that are described later in this chapter.

Meaning as Memorising the Sequence

The conceptualisation of meaning is coherently related to that of understanding. Learners distinguish two different forms of meaning by their approach to memorising. Something is meaningless if it is memorised at the level of the word or formula. Meaning is gained by working an example, "putting it into practice," memorising "how to do it," in terms of the steps or sequence. The learner uses processes like working the knowledge through an example, and memorising and
understanding "comes along." This view suggests that knowledge is understood with the same lack of discrimination that was evident in the act of learning. For Margaret, meaning is acquired through relating something to your own experience but in this form of applying, relating is a process of attributing or associating the learned definition to that experience.

**Early Relativism**

The view that another's understanding may differ from one's own was evident in Case 6.1. The learner is aware only that there is a difference in remembering: an early form of relativism. The way in which this is understood is congruent with the reproductive nature of learning which is expressed above. The simultaneity of the appearance of this form of relativism and the embryonic form of making relations that was described earlier suggests that they are associated in some way. That is, by associating one becomes aware of differences.

**The Meaning of Knowledge**

In Learning as Relating: Remembering How knowledge continues to be characterised as correct, measurable, and provided by an external agent: "...anything that you get taught ... that actually goes into your head..." (Joel, 91/95/B), "...it's just information about specifics ... whatever it is that you're learning..." (Megan, 91/96/A), or "...knowledge is information that you have in your head" (Naomi, 93/110/A). However, now knowledge is characterised in terms of different forms of association. Students' metaphors reflect an accumulative conception of knowledge that differs from those described previously. Case 6.1 illustrates how students talk of building blocks of knowledge, or processing "inputs" that can then be used. Unlike earlier categories, in this experience knowledge is now more actively associated. The relatively static and general idea that understanding is suspended until sufficient information has been accumulated that was evident in the early parts of Chapter 5, changes to a notion of knowledge, and understanding, that can develop. Moreover, there is also evidence in the data where the steps appear as simple inferences. For example: "...if you know A=B and B=C then you don't have to know that A=C to find out what C is. ... You can draw on those two concepts to develop a third" (Andrew, 91/58/A). Andrew's view implies that by understanding something, something else can to be understood. This notion of knowledge gives its application more immediate
currency. It also suggests a more 'relational' view of knowledge that heralds the more advanced experiences of relating that are described later in the chapter.

The Relation Between the Act and Object of Learning

In Learning as Relating: *Remembering How*, the object of learning is manifest as a technical manipulation of knowledge. For instance, in the earlier reference to Margaret's comment, "...take some data and then manipulate it through the sequence..." (92/30/A), what is figural for her is the sequence rather than the meaning of the data. Andrew provides another example:

...when I say I understand something ... I can see *why* something has happened. If I have understood how say ... visual perception ... how we can learn about the brain and the lesions in the brain in brain damaged people ... by presenting images in different areas of the visual field because we know that a certain area of the brain controls a certain part of the visual field. ... Well I understand that ... I've been told what part of the brain ... controls what part of the visual field. ...if you can explain [that] to somebody then you obviously understand it. ...if you can follow the steps ... without reading it or listening to somebody and *then* doing it. If you can do it on your own bat then you understood it. You've drawn a relationship between (Andrew, 91/64/A, his emphasis).

In this passage Andrew's emphasis on "why something has happened" is the sequence of relations that he makes between the parts—the steps.

In addition, it was evident that the object of learning more often comprised an example of the principle, rather than the principle itself. For instance, Mandy chose to discuss the accuracy of eyewitness reports. She focused on misinformation: "...they said misinformation is due to ... when people are given questions which are leading. Like if you're being interrogated by police ... and they said, so did so and so say it happened? ... And you might say yes, even though you didn't really think it was like that" (91/50/A, her emphasis). She provided a few more examples of misinformation and then shifted her focus to eyewitness reports and talked about memory and time. Despite Andrew's act of inference in the section above, Mandy's example implies that in these early experiences of Learning as Relating, inference *from* a principle is unlikely. At best, learners tend to describe something in terms of an analogy with a remembered example.
Learning as Relating: Knowing Why

This second experience of learning as relating, Learning as Relating: Knowing Why differs in a significant way from that which was described previously. Case 6.2 shows how the focus has shifted from relating as remembering how, in order to do something correctly, to a form of relating that is embedded in knowledge of its causes and effects, or knowledge of the implications of applying something in a certain way. This shift in learners’ experiences of their relation with what is learned is reflected also in their view of agency. The Case illustrates how students are beginning to assume personal responsibility for what they learn rather than attributing that responsibility to an external source.

Aspects of Learning as Relating: Remembering How are evident in this act of learning but with the change of focus they assume different, albeit related, meanings. In the previous experience, the meaning of knowledge and the object of learning were conceptualised in terms of sequence and both the structural aspects of learning and its central referent were associated with remembering the steps or procedures. In contrast, in Learning as Relating: Knowing Why, learners assume that knowledge is sequenced and they seek the pattern or structure because it gives meaning to what is learned and allows it to be applied. The notion of sequence or steps is now an integral aspect of the structural relations of the act of learning. The referent has changed from concern with procedure to a concern for greater and more effective use of knowledge. For these learners, what is figural is being able to utilise the knowledge appropriately and the act of learning is the process by which this occurs. These features are summarised in Figure 6.3. The example of the object of learning shows a focus on structure.

Learning as Knowing Why

![Diagram](Image)

Figure 6.3: The Act and Object of Learning as Relating: Knowing Why

200
Case 6.2: Learning as Relating: Knowing Why

<table>
<thead>
<tr>
<th>I guess I'm just beginning to realise how learning affects my life.(^1) It's a process of taking in knowledge, understanding it, working with it and actually knowing how to use it. And the way to use it is also knowledge.(^2) It's not just the facts but how to put it into practice: how the use of it affects people and yourself. Like, we're given theory,(^3) how to handle people or communicate or use interpersonal skills. We do exercises where we can see how it works. It's important because if you don't learn how to use the knowledge it's just trial and error, and it could have the wrong effects on other people and yourself.(^4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I learn through the experiences of the lecturers, what they tell us about things.(^3) You can see how they use the theories, how it came about, what the effects were.(^4) I mean I've done all these things but now I'm learning why I've done them.(^5) Well take interpersonal skills, you know putting it into practice and being able to see where everything belongs I suppose gives me sort of my own theory or a pattern of how it works.(^6) That's how I remember things; if I follow the pattern then I can learn from that.(^7) It's like setting up cues to help you remember, setting up different ways of keeping it in your long term store, and being able to access it afterwards.(^7)</td>
</tr>
<tr>
<td>I guess understanding's a process of being able to take it in, work with it and learn from it(^9) and if I can't do that I don't understand it. It helps if you can make the links with other things, it gives it a place to fit and so it's much easier for it to be remembered.(^7) I don't think you remember anything for long if you don't understand it, it just doesn't stay with you. I think understanding's like a gradual building on things. It grows.(^8) And learning's like what you go through before understanding comes.(^9) It's coming across material, learning the material and then understanding it.</td>
</tr>
</tbody>
</table>

**Note:**

1. Change of boundary.
2. Use, applying or relating is knowledge.
3. Source of knowledge is external, it continues to be provided.
4. Focus on effects and correct use of knowledge.
5. Focus on seeing why.
6. "Own" theory is the pattern or where things fit.
7. Reproductive understanding, as learned relations or pattern.
8. Accumulative nature of understanding.
9. Two forms of learning/understanding relation: you learn from understanding and you learn in order to understand.
I suppose you could learn facts but you may not understand what they mean. You could have the information in there, but that's just learning. I'm not aware of doing that but I suppose it does happen sometimes. I try to understand, to find out. I like to know, not just that it is but why it is so, and how it works and everything. I mean if I'm given something and I don't understand it I have to try and find how it links up. I use text books, ask the lecturers, do more research if necessary.

Meaning? Well it depends if you can make it link with something else. You know, how well the person has written it in the first place, whether they've given it meaning in itself. If they make the proper links you can follow their way of thinking, it all fits together, it all works. It's like the purpose behind it, how it works - what it does and why it does it. And also if you have the meaning you know if you need to apply it, if it applies to other things. It's got to be something that I'm interested in, something that I like or if it affects me in some way then it has meaning for me. Meaning and knowledge are fairly similar. I suppose knowledge is not just having the facts at hand but also being aware what it is all about - understanding it I guess.

General observations on Case:
- The repeated focus on use: "knowing how to use it;" "the way to use it;" "how the use of it affects people;" "putting it into practice."
- Relation or link is characterised as "why."
- Both learning and understanding are experienced as a process: "It's a process of taking in the knowledge...;" "understanding's a process."
- Language - the use of active verbs: "working with it;" "putting it into practice;" "try and find;" "I like to know why."
- Existence of a passive and more active form of learning: "we're given the theory;" "if I follow the pattern;" and "you can make the link;" "we can see how it works."
The Referent of Knowing Why: a Change in Boundary and Temporal Focus

Case 6.2 illustrates this experience of 'relating' as informed practical application. The principal referent of the experience is using knowledge for its proper purpose and knowing how and why it is related or applied to something. For example, learning is: "...being presented with facts and ideas and things, and being able to take them on board and use them" (Margaret, 93/21/A); "...getting the information and being able to apply that at a later stage ... it's something to fall back on" (Diana, 91/72/A); "...acquiring knowledge, ... absorbing information ... if you learn theories, you learn how to apply them, ...using them in practice" (Mandy, 93/30/A). The referential aspects and structural relations of the phenomena that make up the experience are shown in Table 6.3.

Table 6.3: The Referential Aspects and Structural Relations of Learning as Relating: Knowing Why

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Using knowledge correctly, for its proper purpose, knowing how and why it is applied.</td>
<td>You take in (memorise), find or work out the relation or pattern, or form a theory of why things work.</td>
</tr>
<tr>
<td>Memorising</td>
<td>Memorising is reinforcing the links or connections between different parts.</td>
<td>Reinforcing is associating one part with another.</td>
</tr>
<tr>
<td>Remembering</td>
<td>How things fit together.</td>
<td>Remembering or working out own theory of how it works.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing the relations, the why: cause and effect; history and implications, or where it fits in order for it to be applied.</td>
<td>How the different parts are related and/or patterned, where things fit or how things work.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Understanding is the outcome of learning.</td>
<td>You learn by knowing how and why and come to understanding.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Relations that appear or that you make.</td>
<td>Working out how it works, seeking relevance or purpose.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge can be given or is found out and is used to infer relations. Knowledge must be relevant and applicable, it has a rationale.</td>
<td>Machine metaphor—the links or relations show how the knowledge works.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Patterned or structured.</td>
<td>New knowledge relates to prior knowledge to produce something new—accumulation of breadth and depth.</td>
</tr>
</tbody>
</table>

Table 6.3 shows that in this experience there is a change of centering from the more technical and immediate how to do it that featured in Learning as Relating: Remembering How, to use that is concerned with the theory of how things work or
Learning as Relating: Knowing Why

why things happen. For example: "...I have been out in the business world, I have
done all those things ... now I'm learning ... why I have done those things...", and
learning provides "...the theory behind the actions..." (Lydia, 92/21/A); "...[you
look] it over a couple of times and sort of say, OK this is what happens [and I] put
it into my own words..." (Mandy, 92/28/A); "...you're learning ... the
philosophical reasons of why you're doing it..." (Hugo, 92/24/B); "you've got the
knowledge of or the experience of why that is happening" (Diana, 91/72/A, her
emphasis); "...I think it's very applicable. ...you can see why things are
happening..." (Leonie, 91/37/A).

This focus on relating as use has several parameters, all of which are
concerned with the context of application. First, these learners understand that use
assumes knowledge of effects, for example: "...you have to know that there's
consequences" (Leonie, 91/58/A); and, "...how to use it and what it's going to do"
(John, 91/20/A). There were elements of this characteristic in Andrew's example
of inference in the previous experience (see p. 198). John revisits his focus in the
passage below:

Learning, [is] gaining knowledge and how to use it, how it affects people and
how it affects yourself. ...if you gain knowledge and you don't learn how to
use the knowledge right, it could have some effects on other people and
yourself that weren't meant to be.
Right so gaining knowledge?3
And how to use it. ...we're gaining knowledge ... through the lectures we're
given information and we take that in and we learn how to use it, the way to
use it is also knowledge, not just the facts but also the use of it is knowledge
as well (John, 91/57; 59-61/A).

For John, learning is concerned with using knowledge correctly, for its proper
purpose and knowing its effects. This meaning of use, moves away from the
immediacy of practice in order to learn, to use that has consequences. Thus the
focus on how and why and cause and effect gives the application of what is learned
a temporal focus that was not evident in previous experiences.

Second, there is a shift in boundary. In previous experiences students tended
to focus on learning for educational purposes but this is now extended. What is
learned is understood in terms of use in other parts of life. Learning is "...retaining
new information ... and applying it in ... life broadly" (Simon, 91/71-72/A); and,

3 Note that in this interaction, John could have taken up my focus on gaining knowledge, however he
immediately refocussed our attention to the use of knowledge.
"...what I'm learning now is going to affect all parts of my life not just work but socially and with my family and everything" (John, 91/17/A).

Both foci suggest that learning now has a future orientation. For example:

...they give us situations like they give us information ... a child develops this way... Later on ... I might see a kid ... doing things and I think ... he might be doing that because of, ... and I can refer back to that. So ... learning is getting the information and being able to apply that at a later stage and it's something to fall back on. You've got the knowledge of ... why that is happening. It's not a case of seeing something and taking it at face value. You can understand why maybe it's happening (Diana, 91/72/A, her emphasis).

Knowing why and relating this knowledge to other experiences allows these learners to extend the context of application. This focus on why and the notion of effect also explains the way in which past and present experiences are linked to the future. The nature of relating as applying has changed from a repetitive how to do it, where what was related were the steps or sequence, to practice that is "referred back" to previous knowledge or rationale. Furthermore, knowledge itself is conceptualised in terms of use. This experience of relating something is not necessarily practical—it can be in the head—but there is more emphasis on active and external application.

Knowing Why: A Shift in Agency?

John's understanding of effect (see John, 91/57; 59-61/A, above) shows a kind of personal accountability that has not been evident previously. Similarly, the act of learning is beginning to be understood as the learner's responsibility. Although John is given information, he is using the personal pronoun and active verbs: we learn how to use it. There are other examples: "...working with the knowledge..." (Lydia, 92/23/A); "...put it into action..." (Lydia, 92/40/A); "...you can see the links with other things..." (Margaret, 93/52/A); "...you can start to relate it to other things..." (Gemma, 91/84/B).

The Structural Relations of Learning as Relating: Knowing Why

The step like characteristics that comprised the referential aspect of Learning as Relating: Remembering How are now integrated into the structural aspects of learning itself. Learning is: "...a process" (Diana, 91/71/A); "...a process of taking in knowledge, understanding ... and working with the knowledge and being able to utilise [it]" (Lydia, 92/23/A). Moreover, the shifts in boundary and temporal
orientation that were discussed above suggest that the closed circularity of earlier experiences has assumed a structural organisation that is both more complex and more open than previous experiences. The structural relations of Learning as Relating: Knowing Why are summarised in Figure 6.4. The figure shows the increasing complexity of this experience. It also illustrates how these learners interpret the notion of relating, for example, applying new knowledge to what was known previously.

Figure 6.4: Structural Relations of Learning as Relating: Knowing Why

Knowing Why as the Beginning of 'Making Relations'

In Learning as Relating: Knowing Why, learners understand relation in two ways. The first interpretation is more common, and it resembles those that were described in Chapter 5, in which students interpreted what they learned as something concrete that was prescribed by an external agent and tended to be memorised. What was memorised included the given relations of its parts. The second interpretation of relation is more active. Students understand learning in terms of forming the relations (see Figure 6.4). Margaret illustrates both experiences in the passage.
below. For instance, she understood *meaning* in terms of the given relation or link that is "naturally there" but also as "make[ing] the link":

... if what you're writing doesn’t make sense or doesn’t link things together, then it’s meaningless ... and the more meaning something has the more it’s easier to absorb, and the more easier it’s to remember. 

... *how do you get that meaning?*

Well sometimes it’s just naturally there ... you've already heard about it in a lecture or something and so it’s just reinforcing that memory in your mind and so it’s already got meaning. Or if it’s new ... work it depends if you can make it link with something else (Margaret, 93/63 - 66/A).

Lydia too, shows these dual characteristics of both "forming" but also relying on the provision of a pattern which allows her to follow the theory or the author’s way of thinking:

...the way I remember things is by having to put it into action and being able to see where everything belongs, so forming ... my own theory or some sort of ... pattern in how it works. [Take] the Kolb learning cycle. There's probably four stages there of learning and to me that's a pattern. ... [and in] my learning processes I really need a recipe to follow and then I'm fine. So if I follow that pattern then I can learn from that (Lydia, 92/40 - 42/A).

Lydia's notion of recipe appears to resemble the step like organisation of Learning as Relating: *Remembering How*, but here it changes. In the previous form the steps or sequence tended to be memorised as a whole entity. In Learning as Relating: *Knowing Why*, the "pattern" is the recipe and it can be worked out and learned. Although the act of learning continues to be predominantly reproductive, the "forming ... my own theory or ... pattern of how it works" is an example of a change of centering. The learner may memorise the pattern or steps but is also drawing on "how it works" to form a theory: knowing why rather than remembering how.

In these examples, the direction of the relation tends to be the application of new knowledge to previous experience, for example, how course knowledge is used to explain behaviour of both self and others. Or in Diana's case (above), what might be experienced in the future. Another form of relational thinking is evident in students' observations of the way in which knowledge is used by others and in their recognition that there may be another way of looking at something: "You can see how they use the theories and what the effects were, what the outcomes were" (John, 91/65/A).
Relationality and Reflective Thinking

Appearing simultaneously with the focus on why, and relation, is evidence of simple inferences, or linear-like reflective thinking which takes a form resembling *if this then this*. Students associate it with practice and notions of cause and effect. For example, Leonie talked of consequences (see p. 204): "...you have to be able to think what if, if I do this ... I think that's ... a lot of what learning is, to ... be able to plan and ... predict ... [to] know which way to go, which way not to go, or how to tackle this" (Leonie, 91/58/A). This way of thinking appears to provide learners with space to move beyond "using the knowledge" as rehearsal to learning that seeks relations. However, students continue to assume that the actual learned or understood material is a reality. In general they tend to take a non-relativist position.

Understanding as Knowing the Relations

In this experience, understanding is knowing how knowledge is related, where things fit, or how 'it' works, in order to be able to use it. For example: "[understanding is] ... **knowing** how to use it ... I could know of a certain theory ... I can understand how it works..." (Mandy, 93/61; 63/A, her emphasis).

Two versions of understanding are evident in the data. They resemble the two forms of relating that were described earlier. For example, in the *first* version there is an external understanding that is to be gained. Here the act of understanding is to recognise the relations or place things in the *right* order. Lydia's earlier reference to pattern or recipe is a good example of this. Margaret provides another example:

[understanding] seems to put things in the right place. ...you understand how the machine works and you've put all the pieces in the right place, ... and that means you've learnt it right and understood what you've learnt, whereas if you didn't understand ... then you probably wouldn't put things in the right sockets and things wouldn't work" (Margaret, 93/44/A).

Margaret’s use of the machine metaphor suggests that what is understood is a concrete entity. Gemma provides another example:

I don't think it's an immediate understanding. It's like a gradual that expands. Like you have a small understanding of something and then something else adds on to it and then you just come to know that without actually realising it. ...it's ... like you may learn about something in one subject, ... and then it's referred to in another subject where you don't think
there's any connection and you realise that all these connections are occurring everywhere and it's expanding on everything ... in a different context (Gemma, 91/56; 59/B).

Gemma's view of understanding heralds the experience of Learning as Constructing which is described in Chapter 7. Unlike that later experience however, this act of relating just seems to happen: "...you don't think there's any connection and you realise that all these connections are occurring." Students focus on how things have come together, and how different aspects of knowledge relate:

...as you're being taught something you say, oh yeah I remember that from before or ... I see how that works now, it links in with this and with that, and often it will make something that was half understood, fully understood because it links in better with that (Margaret, 93/58/A).

The second version of understanding is more concerned with making relations and students adopt a more personal form of agency. For example: "...if you can link it up with something else it becomes meaningful" (Margaret, 93/47/A). Understanding is effected when phenomena can be related to or placed in the context of the person, the relation is made with prior experience and with other peoples' experiences. Here, the learner views knowledge as more meaningful if you can actively make the relation: "...I look at it and say why is this so and if I don't have an answer to that or the reason ... I'll go looking for it and see if I can find it" (John, 91/91/A). Diana's view is similar:

...I've got to read over and over and I've got to try and think of situations where it applies and then a gradual understanding of how it works or why it works ... comes to me... It's like ... you've got to know why that engine works. I have to know why something works (Diana, 91/92/A).

The existence of these two forms of understanding is consistent, given that, in both learning and understanding it is the relation as applying that the learner makes figural. Moreover, in both versions what is understood is accepted as normative, and in both, the common metaphor tends to be associated with machines. Nevertheless, the data suggest that the two forms are inter-changeable. Thus, the way in which learners move between these two forms in a single act of understanding could be interpreted as experience in transition from one to the other.

In Learning as Relating: Knowing Why understanding is an outcome of learning: "Learning's ... like the process of getting to understanding. ... It's what you go through before understanding comes. ...[it's] coming across material and then comprehending material and then understanding it..." (Gemma, 91/61-63/B).
The reproductive nature of learning may explain why understanding is the outcome of learning: you learn in order to understand. It may also explain the fact that both memorising and understanding can occur simultaneously. The meaning of learning and understanding and their relations are summarised in Table 6.3.

Increasing the Repertoire of Learning Strategies

It will be evident from the preceding description that in Learning as Relating: Knowing Why, students use an increasing repertoire of learning strategies. The outcome of some of these is the reproductive understanding that was described in the previous chapter. For example, "...if I have read something previous to a lecture, I can memorise it almost word for word, I can really understand it properly if I've read it or have an idea of it before I go into the lecture" (Hugo, 91/58/B). However, it is the focus on why that affects the agency and the extension of their repertoire of strategies. For example, like Diana (see Diana, 91/92/A, above), Leonie needs to know "...why I have to do it." She explains: "...if I can understand, I think why ... and [when] I can see where I can actually apply it somewhere along the line, I think it will fall into place for me" (Leonie, 91/93/A, her emphasis). In this case, why is concerned with fit: "...I can see the meaning, or why it's there, or why it applies, why it's linked there" (Leonie, 91/98/A); "it's like taking something and ... analysing it yourself and working out how it works and why it's like that and why all the interrelated bits relate" (Kate, 91/87/A).

This aspect of relating is also discussed later in terms of the relevance of knowledge. Acquiring knowledge occurs through practice in different situations: a form of procedural rehearsal that differs from the repetitive practice that was used previously. The term "...taking in the knowledge..." now implies a more active form of acquisition. Learners give more emphasis to the skills of how rather than focus on the procedural aspects. Case 6.2 provides some examples: how to handle people by using acquired interpersonal skills; and, how to explain behaviour by resort to theory.

Experiences of Knowledge, the Importance of Relevance and Purpose and their Relation to Meaning

Knowledge continues to be understood in terms of an additive accumulation but it is now a more organic and dynamic phenomenon that is strongly linked with understanding and meaning. For example, knowledge is "...a big bank of ...
Learning as Relating: Knowing Why

everything you know in conjunction with how you use it, how you act on that knowledge" (Hugo, 91/149/B); "knowing. ... not just having facts at hand but also being aware what it is all about ... understanding it I guess..." (Gemma, 91/80-81/B).

In line with the focus on knowing why, the purpose of knowledge is a key factor which affects whether material is understood or not. For Gemma, meaning is:

...the purpose behind it. ... what it's aiming for, what it's all about. ... you know if it applies to other things, applies to things you already know ... then you're aware of what you're reading or looking at. ... whereas if it's things that you don't have much interest in or ... you just can't understand it ... it's very difficult to concentrate and remember it. ... [I]f I don't follow something I'll like reread it and then if I still can't get it I'll reread it again and either I'll dismiss it as not being very important or I'll try again, see what I can get out of it.

...what makes you decide whether you'll dismiss it or try and get something out of it?

...whether it stands out, whether it works in with other things that surround it sort of thing ... or whether it just seems like something that's not really relevant to the rest of the material you're looking at or the subject you're looking at (Gemma, 91/73-74; 76-78/B).

For Gemma, meaning and purpose are associated with how the knowledge is applied. Likewise, John experiences meaning synonymously with understanding: "...meaning is how it works, what it does and why it does it" (John, 91/96/A). He reiterates Gemma's emphasis on interest. In order for something to have meaning it must be, "...something that I'm interested in, something that I like. ...if it affects me in some way then it has meaning for me." (91/101/A). Here, there is coherence in the relation between meaning, understanding and the acquisition of knowledge. For example:

...I work in the building industry so it does affect me because I'm going on building sites every now and then. I can look at building sites now and see more than what I saw before I started the course. So most of what I've learned ... has had meaning for me because it directly affects me in my employment (John, 91/102/A).

These passages provide an illustration of a conception of knowledge that is utilitarian. The passages also provide examples of the wider context of applying. The nature and structural aspects of knowledge and meaning are summarised in Table 6.3.
The Relation Between the Act and Object of Learning

Reference was made to the object of learning in John's example of chi squared (John, 91/81 - 82/A, above). In this example, what is learned reflects the thematic characteristics of this act of learning. In their discussion of what is learned, students consistently focus on the effects, why something is, or how things work. In the following example, John talks about leadership. The principal theme is how things work. Leadership is:

...how when you're in informal groups certain people tend to take on leadership roles naturally. ...how the groups inter-relate with each other. ...how they work as a group and how the leaders influence the way that the group works and the directions they work in. ...how the leaders are picked, like within the group (91/36/A).

John emphasises the relation and effect of leadership rather than what constitutes the substance of leadership. He was asked what stood out for him about this topic:

...I think just because we've been doing it in the last few weeks it's fresh in my mind and we're still working on it so I'm still turning it over in my mind, how it works... Well we got the base in the lecture but it was reinforced in the tutes where we could see it at work, how it came about (John, 91/37; 49/A).

Similarly, in the passage below, Lydia focuses on why:

...out in the business world, I have done all those things ... I guess now I'm learning ... why I have done those things, why I'd been part of those things that have happened in the business world. ...so my learning process ... is giving me ... the theory behind the actions that have happened outside (Lydia, 92/21/A).

The use of knowledge is associated with the theory of how and why: "why I have done those things" and learning provides "the theory behind the actions" (Lydia, 92/21/A). Lydia's personal focus in "why I have done those things" resembles John's more general concern with the effect of the knowledge that was described earlier. These passages also illustrate the use of past experience and the nature of the future orientation that was mentioned previously.

Learning as Relating: Understanding Where

Learning as Relating: Understanding Where is the third experience that is described in this chapter. The experience grows out of the earlier experiences of learning that were described in this chapter and Chapter 5. Yet, in its shift in focus to
understanding, it also sets the scene for experiences that are described in the Chapters 7 and 8. The act of learning is illustrated in Case 6.3. The Case provides a profile of a learner who is becoming aware of skills and capacities that were previously unknown, who shows a developing capability, and who associates learning with the opening up of new opportunities and possibilities. The Case also suggests that learning is more dynamic than previous experiences. The principal features of Learning as Relating: Understanding Where are summarised in Figure 6.5. In the Figure, culture as the object of learning typifies these students' concern with the context of application. The experience shows a trace of the focus on why that was evident in the previous experience but here the theme is understanding. The object also reflects a perspective in which learners are aware that understanding is concerned with making relations between a range of different aspects of knowledge.

![Figure 6.5 Act and Object of Learning as Relating: Understanding Where](image)

**The Referential Aspects of Learning as Relating: Understanding Where**

Like the previous experiences described in this chapter, what is made figural in Understanding Where, is relating as application. Yet despite some similarities with the experience of Learning as Relating: Knowing Why, here there is a change of centering. What constitutes learning now "...depends ... in what context it appears in" (Carl, 91/64/A). The learner's focus extends outwards from the actual act of relating, to relating in terms of the context of application: recognising and/or seeking new situations in which what is learned can be applied. For example, "I
Case 6.3: Learning as Relating: Understanding Where

Learning is different for different people and I suppose it also depends on the context.1 It's acquiring knowledge and understanding what to do with it. Like you have to take it in and process it and use it in your surroundings, in your life. It's understanding where it applies2 to say, other knowledge you have, and to different situations,2 maybe ones you find yourself in at a later date.3 You learn things in relation, in how they relate to other things and other situations because nothing stands by itself.4 So you need to be able to, not so much categorise it but see what it's associated with.4

How do I learn? Well, in lectures I write down key points and I suppose I try to think where they tie in with things we've been taught before, or things I learned at work or something.4 You know, I try things out and think up examples. Like, I make an effort to associate things together so I'm more likely to remember them.5 I mean, sometimes it'll grab my attention but I've got to see where it applies.6 Then it sort of stands out in some way. It's really to do with how interested I am because interest changes how easily I can relate it with what I'm trying to learn or trying to understand. It has to have some personal interest for me and then I'll make an effort.6

Understanding means that when someone says something I just know what they're talking about.7 I can see how it works.8 I know what it's related to and what it's for.8 I mean it's OK to see it in theory but when you can actually see how to do it yourself you learn a lot more. For example, we planned a training needs analysis and then did a critique using our own perceptions and other peoples' feedback. It sort of produced a more well rounded view. So it's being fully aware of something, whether you're given it or you've found it for yourself.9

Note:
1 Learning is relative and plural.
2 Focus on applying and the context of application.
3 Future orientation.
4 Relational view of learning: what is learned is applied to prior experience and to different contexts.
5 Remembering is understood in terms of relation.
6 Applying is relational, associated with personal interest.
7 Understanding experienced in terms of knowing.
8 How it works is how it is related or applied.
9 Agency - knowledge can be given but also found out.
You think about and reflect on the effects and what they mean and you come to the point where you understand the processes or events behind the actions. It's not just learning to the extent where you pass the requirements but to the extent where you know it.

I have to understand it before I can learn it. I guess for me to understand it must mean something to me, like it's got to affect me personally. To me meaning is a way to understand things and the more meaning it's got the easier it's going to be to learn and understand. Like it holds something for me, a value or something. It's hard to explain but if you can attribute a value to it you can use that value to understand things. It's not something that someone else can give it. It's personal, like I give it the meaning. And if I understand something then I'll remember it for a long time because I don't have to memorise it - it's just there. Like memorising to me means learning by rote, trying to remember the actual sentence not the meaning and I don't like doing it.

Knowledge is what you know and it develops as you learn more. It's useful information: you have to know what it is to be able to use it. You know that it will work or not work.

<table>
<thead>
<tr>
<th>General observations on the Case:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughout the case there is either an implied or explicit focus on understanding: &quot;It's understanding where it applies...;&quot; &quot;I can relate it with what I'm trying to understand.&quot;</td>
</tr>
<tr>
<td>The range of strategies and the personal nature of agency, (use of active verb), awareness of active involvement: &quot;I make an effort to associate things;&quot; &quot;You think about and reflect on the effects;&quot; &quot;I try things out and think up examples.&quot;</td>
</tr>
<tr>
<td>The personal nature of meaning and understanding: &quot;it must mean something to me;&quot; &quot;meaning is a way to understand things;&quot; &quot;it holds something for me... a value;&quot; &quot;if you can attribute a value.&quot;</td>
</tr>
<tr>
<td>The way in which the more active nature of learning and the more organic experience of knowledge appear synonymously.</td>
</tr>
</tbody>
</table>

10 The active and more extensive nature of understanding.
11 Understanding distinguished from assessment requirements.
12 Reversal of the understanding/learning relation.
13 Understanding and meaning are personally related.
14 The focus on personal meaning.
15 The learner makes meaning.
16 Memorising and understanding are distinguished.
17 More organic but accumulative view of knowledge - it develops.
understood ... the processes of how it all worked ... the underlying connotations ... of how that can be applied to other areas..." (Carl, 91/94/A, my emphasis). Dennis elaborates:

[Learning is] ...acquiring knowledge and ... understanding what to do with it. Or making mistakes and figuring out not to do that again. ...you understand the reasonings behind, say ... I now understand I should talk differently to different people, ...I know the reasons why, the basis of why. And just the background knowledge should help me be more successful in recognising instances where a new strategy or a slight change in strategy is necessary (Dennis, 93/25-27/A, his emphasis).

The focus of relating/applying has shifted from knowing why to recognising instances where the why is significant: for example, applying as talking differently in different situations. Leonie experiences learning similarly:

...the accumulation of knowledge ... the hard core stuff but also ...practical learning experiences ... you've learnt your theories and ... you apply them. And from your own practice knowing that ... you can go in with a plan but don't stick with the plan if you see it’s not working. You have to be able to think on your feet and if you can see it's not working, swap it to something else (Leonie, 92/42-43/A).

In the passage that follows Leonie shows the way in which Learning as Relating: Understanding Where is associated with the experiences described earlier in this chapter: "I think if you can understand, ... if you can get answers to the why question ... that brings about understanding, ...why and the how actually give you the understanding of things" (Leonie, 92/66/A). In this experience, applying (as relating) is associated with a physical context or in terms of an intellectual association with other knowledge:

...being able to see where it applies, where it is applicable to as in other knowledge you have ... not so much categorise it but see what it is associated with and then being able to store it, remember it and bring it out of your memory and apply it to a certain situation you find yourself in (Peter, 91/43/A).

In the Learning as Relating: Knowing Why the direction of the relation between knower and known tended to be the application of new knowledge to previous experience. Here, this form of relation continues to exist but it is now accompanied by relations that are made from the learner to new contexts. In Learning as Relating: Understanding Where, the learner requires an understanding of potential contexts in which particular knowledge can be applied. Thus, the notion of relation between knower and known has become more plural and multi-
Learning as Relating: Understanding Where

directional. These characteristics are more fully discussed below in an exploration of the structural relations of the experience. The referential aspects and structural relations of the phenomena that make up this experience are summarised in Table 6.4.

Table 6.4: The Referential Aspects and Structural Relations of Learning as Relating: Understanding Where

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
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<tr>
<td>Learning</td>
<td>Understanding and/or seeking situations where knowledge can be related/applied and knowing why it is relevant.</td>
<td>Relating new knowledge to previous knowledge and to new situations.</td>
</tr>
<tr>
<td>Memorising</td>
<td>Reinforcing by trying it out in new situations.</td>
<td>Relating what is known to something new.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Making associations—what sounds like...</td>
<td>Working out how the knowledge relates to oneself or other situations.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing the meaning, being fully aware of all aspects of the knowledge, in terms of the different contexts, relations.</td>
<td>Trying it out, making relations with new contexts.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>To understand/know why it is related or applied means that you can learn.</td>
<td>Understanding precedes learning.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>You make the relations - you seek the relevance.</td>
<td>Relations between the knower and different parts of knowledge.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge can be worked out therefore it has personal meaning—it is of value and must have relevance.</td>
<td>Internal and external structural parameters broaden to include the context of application which is more experimental.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>As personal meaning it can be tried out in different contexts so it is more relative and plural.</td>
<td>Making relations between parts.</td>
</tr>
</tbody>
</table>

Understanding as Knowing Why and Where

Table 6.4 shows that in Learning as Relating: Understanding Where, one of the referential aspects of learning is understanding. In comparison to previous experiences, understanding is more centrally concerned with the meaning of the knowledge that is learned. It is "...being fully aware of something..." which is either given or that they have "...come into contact..." with themselves (Simon, 92/56/A). For example, "...if you're presented with 'a,' ... becoming fully aware of what 'a' is, and other side issues with 'a,' like influences on 'a,' and the influences 'a' has on other things, and theory of 'a' and the practical applications of 'a' " (Simon, 92/56/A). Understanding is: "...you just know what they're talking about. You have an understanding..." (Ingrid, 91/43/B); "...understanding is
comprehending... (Leonie, 92/67/A); "...you know it. ...I understood the whole processes of how it all worked ... how [it] can be applied to other areas..." (Carl, 91/92; 94/A); "...acquiring knowledge and knowing what it's for. ...knowing what that knowledge is used for. ...it's no use just acquiring knowledge if you don't know how to use it or you don't know what it can be used for. It's useless knowledge..." (Dennis, 93/55/A). Thus, the focus of understanding is knowing or making sense of something in terms of its application.

The Nature of Meaning and a Shift Towards Personal Agency

In Learning as Relating: *Understanding Where*, the nature of understanding is characterised more experientially than previously. Case 6.3, Table 6.4, and the passages above, provide a picture of a learner who has a more personal relation with what is learned. In this experience, meaning is associated with a sense of personal value and learners understand what is learned in terms of a personal relation. For example: "If something means something to me it's because I'm related to that ... whatever it is... So it's some sort of personal value..." (Simon, 92/67/A). Ingrid also conceptualises meaning in this way. For her, meaning is associated with interest and something that she wants to do: "...it's got to have ... interest that's what I feel. ...you've got to want to do something to have meaning... It's got to have feeling and you've got to feel something towards it. ...you've got to have some liking or sort of wanting something inside you for it to have meaning" (Ingrid, 91/51-56/B). For Peter, meaning is a "...way or a path to understand things" (91/84/A). He too associates meaning with value, however he also sees that meaning plays a role in how he gains understanding: "It holds a value for you. And ... you use that ... incorporate that value and gain an understanding..." (91/87-88/A). These characteristics are evident in Table 6.4.

These passages show the shift in agency that has gradually occurred in the experiences described in this chapter. In Learning as Relating: *Remembering How* meaning was remembering relations that were provided by an external source. In contrast, in Learning as Relating: *Understanding Where*, students are aware that learning involves an intention to make meaning and the agency is internal: a shift from knowledge that is a given, to meaning that is made. This shift appears at the same time as the change in the direction of relation that was mentioned above.
Learning as Relating: *Understanding Where*

**Personal Meaning and the Growth of Relativism**

The shift in agency occurs in parallel with the growth of relativism. The fact that the meaning ascribed to knowledge is personally interpreted and of value to oneself now makes it possible for meaning to be seen differently by different people: "...to have meaning it's, I think it's personal. ... what I have meaning for doesn't necessarily mean that someone else will have that same type of feeling" (Ingrid, 91/61/B). Peter provides further illustration:

...I can't think of a way to explain it. Like the meaning is, I've used it in conjunction with understanding but it is different from understanding as well. ...something can hold meaning for you, hold a value ... so that it is important to you without you fully understanding what is part of it. [For example] ...my art work has a lot of meaning for myself, and it is important to myself and I understand it. But other people they understand it but it doesn't hold the same meaning for them so I guess you can apply that as an analogy ... so the meanings might be quite different as well. It's up to the individual to interpret certain aspects of things they see or view and their understanding of it (Peter, 91/89-94/A).

For Peter, a referential aspect of the act of learning is meaning as personal value. This feature is synonymous with the focus on purpose and interest that was apparent in the Learning as Relating: *Knowing Why*. In that experience it tended to be the knowledge that held interest for the learner. Here, it is the learner that interprets what they see and makes meaning.

Peter shows how the focus on the context of application also affects this experience: "...[T]here's so many different ways of looking at the world and if you want to understand and learn then you're going to have to experiment with the way you look at it and the way you apply things to it" (Peter, 91/62/A). In this extract Peter's different ways of looking are synonymous with different ways of applying. What Peter makes figural is the world as the context of application: "...the way you apply things to it." In this experience, learners understand that there are different ways to apply something. This differs from seeing in different ways or looking at something in different ways that are characteristics of the relativist view of learning that become apparent in the next chapter and predominate in Chapter 8. Yet, the data also suggest that the experiences are linked to each other.

For instance, throughout this chapter there has been evidence of this developing relativism. In Learning as Relating: *Remembering How*, there was an embryonic form of relativism that was associated with remembering that there is
Learning as Relating: Understanding Where

another way. In Knowing Why learners acknowledge that there are different ways to do things. In Understanding Where learners adopt a more relativist stance. They recognise that there is more than one view of something and others may see something from a different perspective. However, unlike experiences in later chapters this characteristic continues to be associated with a cumulative view of knowledge. For instance, Ingrid assumes that by knowing or understanding a lot more, "...you just see things differently..." (91/29/B).

The Structural Relations of Learning as Relating: Understanding Where

In Learning as Relating: Knowing Why, the closed loop like structure that characterised earlier experiences of learning showed signs that it was more extended and open. In Understanding Where, this characteristic becomes more evident. At the same time the different facets of the act of learning show signs of being more integrally related. Learning is "...you have to take it in, process it and then be able to apply it to your surroundings" (Birgit, 92/29/B); "...taking in some information, working with it and ... utilising it. ... Using it in my life as a foundation for what I need ... or using it in my future life in the world to ... help people (Lydia, 93/42; 48; 53/A). These structural relations are summarised in Figure 6.6.

Figure 6.6: Structural Relations of Learning as Relating: Understanding Where

In this experience the learner distinguishes between different acts of acquiring knowledge and using it. However, the relation between remembering and memorising that was evident in Learning as Relating: Remembering How and
Learning as Relating: Understanding Where

Knowing Why, continues to exist so remembering is often understood in terms of acquiring knowledge. Learning continues to be associated with some reproductive strategies but predominantly, both acquiring and using are experienced as different forms of making associations. For example, in the following passage Simon talks about remembering. For Simon, remembering is actively using associations to recall what was learned and "...solidify[ing] it..." Some of the strategies Simon adopts resemble those of previous experiences—the rehearsal and repetitive writing out. However, here it is evident that he uses these strategies with the intention of gaining understanding, posing questions and reflecting on what it is that he is learning. He distinguishes memorising and learning and indicates that memorising is ineffective in terms of accessing the information because something can only be learned in a set way which makes it inaccessible in new contexts. For example memorising is: "...remembering the order of something, how something is presented, ... I could memorise without understanding..." (Simon, 92/62-63/A). However, "...I think if you’ve got a better understanding of something ... when you’re asked to retrieve [it]..." and "...if it’s not presented to you in the same way, you can look at it from a different way and access the information" (Simon, 92/63/A). This distinction between retrieval with understanding, and retrieval of something that is memorised is evident in various forms in the experiences that are described in the next two chapters. Remembering is distinguished from repetitive memorising but as an associative tool it is an integral aspect of the act of learning. Thus, to some extent the circularity of the previous experiences continues to exist and remembering or use is also associated with acquiring or gaining knowledge by trying something out in new situations.

Simon's explanation of remembering provides an example of the way in which the experience of remembering is linked with acquiring knowledge.
Learning as Relating: Understanding Where

An Awareness of a 'Relational' View of Learning

Making associations comprises a more developed view of relating than was evident in previous experiences. Students intentionally relate knowledge that is to be learned to other knowledge in order to learn.

[Learning has] opened my eyes about a lot of other concepts that I hadn't, not thought of but paid [little] attention to previously. ...I think it's expanded, more self developed, ... as I've learnt more here. ....I've sort of filed it away as something else to relate to and it opens up a little bit more of the world. Like you can understand a bit more, and gain a little bit more knowledge about things from applying what I know to various things (Peter, 91/3O/A).

Learning more is understood to open up the learner's world. This idea of opening up becomes more significant in the next chapter where it becomes I am open.

The focus on relations is accompanied by a view of learning that is conceptualised more actively than before: the learner makes relations and seeks new situations where leaning may be applied. There is a focus on being able to do something. Learning involves the use of more complex skills and students use language that supports this, for example: "...reflecting ... in terms of how it relates to you ... thinking about it... how you can use it in different situations..." (Kate, 92/102/A); "...putting order to things I have learnt..." (Peter, 91/36/A); "...relating theory to how it actually works in the work place..." and "...categorising..." (Simon, 92/30/A); "...I used to think about it a lot as well... Like I'd sort of do ... reading and then just ... go away and be thinking about it during the week ... thinking about the effects themselves ... and what they mean and ... quite often I'd just have ... a period of ... insightfulness ... and I would sort of think oh yeah that's sort of what happens..." (Carl, 91/97-98/A). These passages illustrate the way in which these learners assume more control over what is learned and approach learning from a more varied skill base. They recognise also that learning involves personal effort. For example: "...if there's something that catches my eye ... I think oh yeah I can apply that and sort of make a conscious effort of trying to figure out what's going on" (Peter, 91/41/A). They also acknowledge the growing automaticity of learning skills: "[at] ...other times I find I'm ... [figuring it out] unconsciously now and I guess that means it's becoming more engrained, which is good" (Peter, 91/41/A).

These learners also experience understanding as a relational entity. To understand means that knowledge that is learned can be applied to other things. The
focus is the context of application. For instance, Peter talked about Lewin's force field analysis as an example of something he had learned. He was asked the significance of this learning for him:

It could be applied to people. ...It caught my imagination and I thought of possible uses for it ... so it sort of stuck in my mind very clearly. ... I think you have to have some sort of imagination to be able to understand things and the way they relate with what's around you. Otherwise you're going to end up with a very closed approach and view of life... (Peter, 91/55; 57/A).

According to Peter, imagination is the factor that allows him to see or seek out possible contexts of application. This is not the rehearsal of the earlier experiences but trying things out, looking for different situations where the knowledge might be applied, and asking questions like: "...how would it be different if...?" (Simon, 92/28/A). Peter elaborated the role of imagination:

...if you use your imagination then you're going to be able to, it's going to form a different perspective on ways to handle other situations. ...it's useful to ... diverge away from what is generally accepted. ...imagination is sort of like being able to delve into what you know and think oh that could be, like it may not be thought of there but I could do such and such and if I did such and such then it might work... (Peter, 91/59/A).

In this experience, the boundary of making relations is extended across subjects: "...I went to the lectures and ... I did an experiment for the credit points and that was looking at the perception as well. ...also, in philosophy [I] had to do a perception assignment ... [and] I had learned that from psychology so it was a lot easier for me to ... understand the question and answer and do an essay on that..." (Ingrid, 91/38/B).

The elaboration of skill and movement towards a more relational view of knowledge is accompanied by another change in boundary, from a focus on learning task to that of the learner's world (see for example, Lydia 93/42; 48; 53/A, above). This shift was apparent to some degree in the previous experience of applying. In line with these changes is a change in the learner's conceptualisation of the temporal use of knowledge. For example, in Learning as Relating: Remembering How, learning was orientated towards remembering in order to learn. The temporal focus was immediate. In Knowing Why, applying knowledge was characterised by knowing that the outcome of learning was both currently useful and that it might be of use in the future: a temporal extension. In Understanding Where, the temporal focus has changed and is now extended outwards and shows the learner making active relations with new knowledge, seeking new situations in
which learning can be applied. These temporal and spatial extensions are illustrated in Figure 6.6. Like their experience of learning, the boundary of understanding extends beyond the immediate situation.

**Learning Depends on Understanding**

In Learning as Relating: *Remembering How*, learning preceded understanding and it was learning that was emphasised. In *Knowing Why*, the learner's focus was understanding as the outcome of learning. In *Understanding Where* understanding precedes learning: "I think to be more effective in learning you have to understand something" (Simon, 92/57/A). If learning is conceptualised as relating knowledge to new situations, the learner requires a prerequisite understanding of why and where: "I don't think you can have learning without understanding. ...they've gotta be inter-related haven't they? To understand something ...you've gotta be able to do some learning haven't you? You've got to look into ... the how and the whys ... You really can't have one without the other" (Leonie, 92/69/A). The data suggest that this relation is associated with the notion of relevance and personal meaning. Ingrid, provides an example. For her, learning depends upon being able to understand something:

...[learning and understanding are] really inter-related because if you don't understand something then ... you won't worry about it ... like an example, when I used to do maths ... I used to say well I don't really understand that, [and] I didn't bother with it. I just put it to the back of my mind and go on with something else that I could do. And then um I realised that I wasn't really learning anything because I kept putting it back and back (Ingrid, 91/44 - 45/B, her emphasis).

This reversal of the relation between learning and understanding is significant. Previously understanding was experienced in terms of memorising the given relations. Here students refer to acts of learning and understanding as making associations and so *to understand* assumes a different meaning.

In the following passage Carl illustrates these learners' dilemma. He adopts both reproductive and relational strategies and is concerned with understanding the "...processes behind the events..." (91/92/A). His experience of the relation between learning and understanding appears to be transitional. For example, as the dialogue progresses it becomes evident that he is working out the relation between learning and understanding. He starts by saying, "I think understanding is a higher achievement than learning ... I mean you can learn a lot of things but not understand them" (91/103/A). He continues:
...it's also the fact that ... if you can't understand ...I guess there's the other type of basic understanding of what you're doing before you can learn it... You have ... I don't know which would come first, whether there would be ... like a basic understanding before you can learn it and then a total understanding of it, or whether you can just learn something and then understand it later, or whether you can just basically understand it then learn it and then not develop a fuller understanding of it (Carl, 91/104/A).

This dilemma is resolved in the experiences described in the next two chapters. The relation between learning and understanding was summarised in Table 6.4 (p. 217).

Understanding Where and the Nature of Knowledge

In Learning as Relating: Understanding Where, what is learned continues to be experienced quantitatively, as an accumulation of knowledge. However the conception of accumulation differs from that of previous experiences. What is accumulated is understanding, that is, the relations and the different ways in which something is understood. Knowledge is: "...an accumulation of facts but not necessarily ... theoretical facts ... [but] practical facts, knowing that something ... will work and something will not work" (Leonie, 92/96/A): "...it's ... the understanding of how things are ... how things are working. ...every piece in a jigsaw is a piece of knowledge. ...the more you put it together the more useable it becomes" (Dennis, 93/72/A). But to, "...gain knowledge you have to understand the meaning..." (Leonie, 92/97/A). Unlike previous experiences, it is now the act of understanding that builds what is learned into knowledge.

This shift is consistent with the reversal of the learning/understanding relation. For example: "...your understanding of it and various other factors build up into knowledge..." (Peter, 91/97/A); "...you build the basic blocks ... [that] you're going to use. And then once you ... have learned that then you've got to get ... additional things on top of that. So it's always added on and on and on" (Ingrid, 91/35/B). Similarly, Dennis argues: "...though every piece stands on its own, it works better in conjunction with everything else. ...the more you put it together ... the less individualistic it becomes, but the more part of a pattern emerges" (Dennis, 93/72/A). The nature of meaning and knowledge is summarised in Table 6.4 (p. 217).

In the following passage Simon provides another view:

...if you have a full range of knowledge of something, ... you'd have to fully understand what it is, not just understand it from one direction or perspective
but present it in another manner. ...you'd have to be able to sort of understand and relate it back to your own information and knowledge. [So knowledge is] ... a retention of the information which you've learned like through oh different ways, and sort of accumulating that information (Simon, 92/72 - 73/A).

In this passage, to have knowledge implies that the learner not only views knowledge as an accumulation of the different "directions" or "perspectives" in which something could be understood, but also that something can be presented from a different perspective. The more organic character of knowledge in the previous experience is now something that can be "...present[ed] in another manner." This view of knowledge is consistent with the change of agency mentioned above and it appears to be directly related with the views of learning that are described in the next chapter.

The Relation Between the Act and Object of Learning

In Learning as Relating: Understanding Where, the nature of what is learned is consistent with the act of learning that has just been described. Simon provides an example. In the following passages, where he talks about different kinds of organisations, he seeks to apply what he has learned to his life experience:

...The company I work for is very mechanistic and I was just thinking ... how would that be different if the employees were given more autonomy in their job? Then again I'm thinking it's not that kind of job. ...and that's how I sort of relate that info to my own job. ...categorising the company I work for (Simon, 92/28/A).

Note the question, "how would it be different?" He compared the company with criteria for a mechanistic company:

...does this company fit into this criteria? Yes it does and more so than an organic organisation because its characteristics are both. I don't think one company can be distinctly like one hundred percent mechanistic or organic... (Simon, 92/29/A).

He was asked why he did this:

...just to get my interest levels like more in my job. ...think about ... relating theory to how it actually works in the work place in practice rather than just seeing it on a blackboard or a text book [like] this stuff really does exist (Simon, 92/30/A).

The structural aspects of Simon's experience resemble Peter's self-interrogation in his description of the use of imagination (see Peter, 91/59/A, above). Simon actively seeks a relation between the text and a situation. He selects a possible
context of application and then questions how what is learned can be applied to that context. Further, the way in which he reasons that the company is neither one kind nor the other illustrates how the learners' conception of knowledge has changed from something that is concrete to a more relative position. Peter provides another example:

...a friend of mine, he suffers from ......5 ...like I'd understood it before and I could apply some knowledge to what I was learning... But as I gained more and more knowledge from the course ... it opened up a lot more [of] what I'd already experienced... I did further reading ... and I understand my friend a lot better and ... the mind a bit better ... for that experience... (Peter, 91/33/A).

These passages demonstrate how this act of learning has shifted from a relation that happens to one that is intentionally made. Both Simon and Peter emphasise relating as the application of what they have learned to another situation rather than what it is that comprises the substance of the knowledge itself.

Learning as Relating: A Summary

The three experiences described in this chapter focus on learning as relating to knowledge. The first experience is reproductive and technical in terms of its focus on steps and procedures. In the second experience there is a change of referent. The procedural characteristics of the previous experience are now integrated into the structural aspects and learners focus on informed practice, the why as relevance, background and cause and effect. In the third experience, Learning as Relating, Understanding Where, the focus changes again to the context of application. In this experience learners experiment with their new knowledge and talk of bringing imagination into play. In this experience there is a change in the direction of relation between learner and what is learned. In the first two experiences the direction of relation is from the knowledge to the learner. In Learning as Relating: Understanding Where the direction of relation is from the learner to the knowledge. This experience sets the scene for experiences of Learning as Constructing that are the focus of Chapter 7.

5 I removed the name of the disease for reasons of anonymity.
# CHAPTER 7

CONSTRUCTIVE EXPERIENCES OF LEARNING—THE DEVELOPMENT OF SKILL AND AUTONOMY

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CHAPTER 7
CONSTRUCTIVE EXPERIENCES OF LEARNING—THE DEVELOPMENT OF SKILL AND AUTONOMY

Introduction

This chapter is concerned with constructive experiences of learning. Learners focus on understanding and the increasing sense of joy, developing skill, and autonomy that they associate with such experiences.

If we explore these experiences against the context of those that were described in Chapters 5 and 6, we begin to see a coherent pattern of morphing across the outcome space. The chapters make it evident that these progressions in meaning in the phenomena that constitute learning and understanding are subtle and complex. They involve shifts in focus and integrations in what students make figural in the act of learning. For instance, in the previous chapter we saw how the focus on steps and procedures in Learning as Relating: Remembering How, became an integral aspect of structure in Knowing Why. These progressions were observed at the 'micro' level. However, there are also larger shifts that are concerned with an increasing focus on understanding that started to become evident towards the end of Chapter 6.

A review of the relation that learners attribute to learning and understanding provides one example. In earlier experiences of learning, understanding was discussed as one, amongst several aspects of the experience. Its meaning was constituted variously but not as a central referent for the learner. Indeed, often students needed to be prompted to talk about understanding, and when they did so, it was generally juxtaposed in different ways with learning. For example, in Learning as Gaining Knowledge, understanding was seen to be separate from learning. In Learning as Reproducing, and to some extent in Learning as Relating: Remembering How, it was not discriminated from, but subsumed in, learning. In Remembering How and Knowing Why understanding was an outcome of learning—one learns and then one understands. In Learning as Relating: Understanding Where there is a shift in this relation. Despite the learner's focus on relating and the context of application, which is outcome oriented, understanding itself was seen to precede learning.
It is in constructive experiences of learning that the morphing of the relation between learning and understanding, begins to show evidence of being part of a spiraling pattern. A similar pattern is observed in the way in which students focus on different aspects of the act of learning. For example, in the last chapter students' views of learning were associated with different ways of relating or applying knowledge. Like students' focus on understanding as outcome, their view of learning also focused on outcome. In this chapter, there is a change in awareness, from having learned by doing something or being able to do something, to having understood. Unlike previous experiences, learning is understanding and learners' experiences are centrally concerned with acquiring understanding and meaning. The shift in the relation between experiences of learning and understanding that began to be evident in Learning As Relating: Understanding Where, is accompanied by a shift in the learner's focus in the act of learning which now reverts from a focus on outcome to a concern with acquiring knowledge as understanding.

Accompanying these shifts in focus is a shift in relation, between the way in which knowledge is acquired and the way in which it is used, that can be aligned with Marton et al's (1997) temporal dimension (see Chapter 3, p. 116). In the first two chapters these acts could be freely discerned as acquiring, remembering, and using. In the constructive experiences of learning that are the focus of this chapter, these acts of acquiring and using are more integrally related. The focus on relating, using or applying knowledge now appears to be autonomous, assumed and unproblematic. In Chapter 7 learners focus centrally on the structural relations and meaning of knowledge and its context. In terms of analysis, the act and object of learning have become more visible to us as observers because learners are more aware and more articulate about their awarenesses. At the same time, the integration and holism that is evident in these learners' increasingly complex experiences makes the descriptive task more difficult. Two different but related constructive experiences of learning are evident:

- **Understanding As Relating**, in which the learner focuses on understanding the meaning of knowledge and its relations; and
- **Understanding As Seeing the Whole**, in which the learner focuses on understanding the meaning of knowledge as a whole entity.

In the first experience the notion of relation that was one of the referential aspects of Learning as Relating: Understanding Where is explicitly picked up by students and further developed. In the second, relation is assumed and the focus becomes
associated with understanding knowledge as a whole: making and manipulating a knowledge object. The main referents and structural relations of the experiences are summarised in Table 7.1.

Table 7.1: The Main Referents and Structural Relations of Constructive Experiences Learning

<table>
<thead>
<tr>
<th>Experience</th>
<th>Main Referent</th>
<th>Structural Relations</th>
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<tbody>
<tr>
<td>Understanding as Relating</td>
<td>Central focus on understanding the meaning of the knowledge (part-part relations). Having an understanding of the underlying concept and its contexts.</td>
<td>Concern with part/part relations: new knowledge is embedded in the context of what is already known by thinking, acknowledging, comparing, finding similar templates.</td>
</tr>
<tr>
<td>Understanding as Seeing The Whole</td>
<td>Understanding the whole (whole/part relations), i.e., seeing the bigger picture, seeing something in a different way, becoming a better person.</td>
<td>Coming to know by learning from experience: comparing, analysing, being critical and realising how much is unknown.</td>
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</table>

In both experiences, and particularly the second, learners are now concerned with how learning occurs. They associate these experiences with developing skill and confidence and there is more of a sense of the range of possibilities that learning brings to the learner. In comparison to previous experiences, students show more self awareness in terms of the process of learning and understanding. They distinguish description from analysis. They tend to talk about learning in more experiential terms and convey a sense of involvement in both learning itself and the knowledge that is being learned. Knowledge has become more accessible to the learner through the development of new manipulative skills and students emphasise becoming more able.
Constructive Experiences: *Understanding as Relating*

In *Understanding as Relating*, learning is concerned with understanding the underlying concept or meaning of knowledge in terms of its relations with other knowledge. The principal features of the act and the object of the experience are summarised in Figure 7.1. In previous experiences where figures have provided a summary of the act and object of learning, the object has comprised a boxed example of a specific description of knowledge that is taken from one participant's data. In Figure 7.1, the boxed example reflects the way in which the learner makes a relation between what is being learned and previous knowledge. In this case it is knowledge of self and a sense of growing self awareness: a characteristic that is typical of this form of the experiences described in this chapter.

![Figure 7.1: Summary of the Act and Object of *Understanding as Relating*](image)

Figure 7.1: Summary of the Act and Object of *Understanding as Relating*

Learners' experiences of *Understanding as Relating* are more fully illustrated in Case 7.1.
Case 7.1: Understanding as Relating

I think learning is understanding. It's gaining knowledge and understanding, seeing all the different aspects of something and how they relate, understanding the underlying concept, what that concept means to me. It's knowing its inherent nature, its properties and how it can be altered in different situations, the way environmental factors affect it, the way it can be changed. Once you understand something it feels like you've always understood it and you don't know what it's like to not understand it. It all seems logical and you can accept it and it makes sense. Take, a maths problem. If I can understand what I'm learning, I can do it, but if I just get the equation without any meaning I'll have trouble doing it until I really understand what goes on behind it. And when I do understand it I can follow how it's done in a logical process. I can stand anywhere on any side of that problem and look at it and do it and I'll have a good picture in my mind of what happens. I look at it and know what it means. Understanding is like opening up a new world. It's like a light being switched on.

I learn when I get exposed to something new. If I read something I look to see what it means, how it relates to different examples and other things I know. And if I don't understand I have to work it out, go through it visually and try and get a picture in my mind of what really happens. I have to use my mind and imagine, for instance, what might happen if that theory was used here, ask myself, 'what if?' and 'if this, then maybe this.' And the more different directions you come at something the better the connection you make with it.

It's easier if you already have some knowledge of it, if it fits in with what you already know. Then you've got somewhere to relate it to. You can apply it to other information you have, things you already knew something about but it just clarifies it and links things that were previously unrelated. You've got a wider appreciation of what it is all about. You're aware of its relevance and applications and of what else you need to know. So learning's cyclical - an ongoing process where you build upon what you know.

Note:

1 Learning and understanding are synonymous.
2 Focus on the part/part relation.
3 Focus on personal meaning.
4 Learning is concerned with the inherent nature of something.
5 Relativist: the meaning depends on context.
6 Understanding is permanent.
7 What is understood assumes an eidetic quality.
8 Understanding as sudden illumination.
9 Learner's awareness of strategy in making relations.
10 Mind as a tool is a focus of experiences in Chapter 8.
11 Knowledge is understood to be related.
12 Learning is understood to be on-going and spiral.
Knowledge is an understanding of how things work or the way things are. So to have knowledge is to have an understanding of the whole concept and how it works because everything is related in some way. Knowledge is the meaning of something. There's no point in knowing something if you don't know what it means. That's important in tying together other ideas, and it's the meaning of what is said not what is said. Knowledge is what things mean to me rather than what it might mean to someone else. People arrange knowledge according to how they see the world, so it means different things to different people. We don't all see the same thing. There are no absolutes are there? Like, you have the meaning of a topic but it's also how relevant it is to you, your interests, your goals. They are distinct and a lot of people get misled by that and so they expect something to be just one thing and then they completely miss the meaning of what's going on. We need to have an open mind when we look at things because there's always more than one side to every issue.

I think learning also makes you more open to things, you know, it helps you to become a better person, through inter-personal skills and things. It makes you feel good about yourself, you have more self esteem. You're always learning something about yourself and your environment and it gives you a broader horizon.

General observations on case:

- Not only is learning understood to be "making relations" but the learner is continuously talking about relating: "how they relate;" "everything is related;" "how it relates ...to other things I know;" "what might happen;" "link things that were previously unrelated."
- Relating is both a referent and part of the structure of the experience so knowledge, meaning, and understanding are inter-related.
- The continuous focus on meaning: "it means something to me;" and "it's knowing the inherent meaning;" "it's the meaning of what is said."
- Learners talk about learning with increasing skill and confidence: "I can do it;" "It makes you feel good about yourself."
- The case reflects learners' active participation in the act of learning: "use your mind and "you make."
Case 7.1 shows that the act of learning in *Understanding as Relating* is relationally complex. The Case reveals that, like *Learning as Gaining Knowledge*, *Understanding as Relating* is concerned with acquiring knowledge. However, unlike that earlier experience, in this view of learning the central referent of the act of learning is the intentional acquisition of understanding, that is, the meaning of the knowledge (Figure 7.1). What it is that learners experience as learning and as understanding are integrally and coherently related: "I think the two are ... intertwined" (Joel, 92/39/B). Indeed, "...understanding ... [is] synonymous with learning..." (Kate, 93/74/A). In terms of the structure of the act, learners are aware that new knowledge *interacts* with previous knowledge to provide an understanding that differs or is changed from that which previously existed. It is this interaction, (understood as relating) that is the focus or referent of *Understanding as Relating*. Like previous experiences, Table 7.2 shows how the referential and structural aspects of this act of learning are inseparably linked (see also Case 7.1 and Figure 7.1).

Table 7.2: The Referential Aspects and Structural Relations of *Understanding as Relating*

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Understanding the meaning of the knowledgeablely making relations between the part and part, forming a network.</td>
</tr>
<tr>
<td>Memorising</td>
<td>An aid to developing relations.</td>
</tr>
<tr>
<td>Remembering</td>
<td>You recall the crux of the knowledge—its meaning.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Knowing or seeking the meaning (relation) of the underlying 'concept'—the parts. Knowing how the context (relations) affects the meaning of the knowledge.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Understanding is learning: 1) Knowing the relations allows understanding (outcome). 2) Understanding is knowing the relations (process).</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>The underlying concept, its implications and context.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge is personal, it is the meaning that one gives it.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>All knowledge is related—focus on part/part relations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Structural Relations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>New knowledge is embedded in the context of what is already known to produce something new.</td>
</tr>
<tr>
<td>Memorising</td>
<td>Thinking about and associating knowledge.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Remembering influences what is remembered and triggers other associations.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Seeking the relations of the parts i.e., new knowledge interacts with prior knowledge to produce new understanding.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>1) To learn produces understanding (outcome). 2) Learning requires understanding (process).</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Relative: meaning differs for different people because it has personal relevance.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>It can be given meaning by seeking the structure and relating the parts.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>By seeking the structure one can construct a network.</td>
</tr>
</tbody>
</table>
Learners' experiences of the phenomenon learning as understanding, and that of the phenomenon understanding have become similarly related. On the one hand, understanding is referred to as: "...the underlying concept behind an idea... that... [the] concept means something to me..." (Anya, 91/62/B); "The idea of whatever it is that you're looking at becomes clear..." (Gemma, 92/47/B). On the other hand, understanding is seen to precede and contribute to the act of learning: "...for me learning is understanding the underlying concept. If I can understand the concept then I don't have any trouble learning something" (Anya, 91/52/B); "...it's being able to comprehend what the material means..." (Gemma, 92/46/B). Thus, the referential aspect of the act of learning is represented by two related versions of understanding in the data: understanding as the outcome of learning and understanding that precedes or is the process of learning (see Table 7.2). The two versions are explained further in the following section.

Referential Aspects of Understanding as Relating: Sudden Illumination and/or Coming to Know

In the first version of understanding, the outcome of having learned means that one has gained understanding (Table 7.2). For example: understanding the underlying meaning of the knowledge or "...knowing the inherent nature of something, its properties..." (Birgit, 93/51/B); "...I have a good picture in my mind of what happens and what goes on" (Anya, 91/63/B); "...you're just looking at something and you know what it means..." (Ingrid, 92/50/B); "...you could call it that brief flash... when your brain finally takes a grasp..." (Joel, 92/38-39/B). Having learned provides experience of understanding as illumination: "...all of a sudden I looked at it and I could understand what it was saying. ...it was like opening up a new world for me because... then I couldn't remember that I'd never remembered [understood] before..." (Ingrid, 92/49/B). Something changes experientially: "...[p]rior knowledge applied to this new knowledge that's been given to you and yeah... it's almost like a shaft of light or something comes down on you and... you can understand it..." (Alison, 93/73/B). The learner perceives something differently as a result of relating new knowledge with previous knowledge (Table 7.2). Ingrid explains the experience:

...it's like when you meet someone for the first time and then you meet them on another occasion they're much different to you on that occasion than when you first met them. It's sort of like an association or something... you see them much differently and that's how I think learning is, you look at it differently (92/52/B).
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The outcome of understanding as looking at something differently heralds the referent and structural aspects of transformative experiences of learning that are described in the next chapter. In those experiences it is the change and looking at things in different ways that the learner makes figural. In contrast, in *Understanding as Relating* it is the relation that is emphasised: "...it's sort of like an association..." (Ingrid, 92/52/B).

In the second version of understanding, understanding as process, it is understanding itself as relating, that is the procedural requisite for learning (Table 7.2). For example: "...you can only have learnt something when you've understood it..." (Kate, 93/79/A); "...ultimately if you understand something you've learned it..." (Anya, 91168B); "...you need understanding to learn properly" (John, 93/59/A, his emphasis). Learning occurs through understanding because "...when you're learning something, by coming to understand it and how it relates to other things that's how it builds into learning, ...you build on that..." (Gemma, 92/48 - 49B). This version of understanding is conceived to be a long term, gradual process of coming to know rather than the sudden illumination that was described above.

**The Structural Relations of Understanding as Relating**

This constitution of the meaning of learning and understanding and their relation with each other is the key to the main structural aspects of the act of this experience of learning. Understanding as sudden illumination plays a critical role in the process of the more gradual coming to know, for it is understanding as the outcome of making relations that enables the learner to see what was learned previously in a new way (Figure 7.2). Kate illustrates the process. For her, learning is acquiring knowledge: "...you get exposed to something new ... and ... it makes an impact on you." The "exposure" and "impact" may also involve revisiting previous experience that "...you may have experienced before but you may not have gotten anything out of it" (Kate, 93/44/A). "You look at it differently..." (Ingrid, 92/52/B) and it is by looking at something differently that other relations may be made.

These structural relations are summarised in Figure 7.2. The ongoing nature and plurality of this experience is illustrated by the use of two kinds of lines. The solid lines indicate the structural relations of the experience. The dotted lines are
used to convey the spiral nature of these students' experiences of the construction of knowledge.

Figure 7.2: Structural Relations of Understanding as Relating

Understanding as Relating: A Shift in the Direction of Relation

In comparison to previous experiences, the idea that a phenomenon can have an impact on the learner represents a change in the direction of relations that are made between the student and what it is that is learned. In earlier experiences of learning the relation was predominantly uni-directional from authoritative source to learner. In Learning as Relating: Understanding Where knowledge was understood in terms of the context of application and the relation became two directional: from phenomenon to learner but also from the learner, outwards towards the different situations in which the knowledge could be applied. In Understanding as Relating the relation assumes a plurality that is multi-directional. For learners it changes from seeing where to looking at it differently and they now place themselves in an iterative relation with what it is that is learned.
Gemma understands learning to be a "...conscious process, something you're aware of" (92/38/B). It is this awareness that leads to a further search for relations. "...I view learning as being a continual process [of] building on previous knowledge..." (Gemma, 92/31/B). Building occurs "...by learning new things ... that would somehow interact with previous knowledge..." (Gemma, 92/33/B). If "...you know how some systems work and how they somehow relate to something else then you can look..." (Gemma, 92/31/B) for further relations and understanding—things that were previously unrelated. If learners have an "...awareness of ... the wider applications ... you can in turn be aware of what else you need to know ... and you continue to learn in that sense..." (Gemma, 92/31/B). The interaction with prior knowledge allows the learner to "...go back and clarify things and connect things that previously seemed unrelated ... [and] further learning would occur between things you had already known, so ... as well as building on it I guess it connects previous things as well, so sort of cyclical I guess" (Gemma, 92/33/B).

This cyclical structure (see Figure 7.2) is reminiscent of the circularity of remembering (as outcome) in order to learn (process) in earlier experiences. Here it is understanding (as outcome) in order to learn/understand (process). The cycle is recursive in the sense that the circular aspects of the process are repeated. Yet it is not truly recursive because unlike recursive structures what is learned in each of the consecutive cycles is a qualitatively more coherent and complex understanding of the nature of the phenomenon—"...it builds into learning" (Gemma, 92/48/B).

Gemma's comments also point to the sequential coherence that is evident across Learning as Relating: Understanding Where, Understanding as Relating and the subsequent experience, Understanding as Seeing the Whole. In Learning as Relating: Understanding Where the outcome of learning was relating what is known to new contexts. In Understanding as Relating: Understanding Where the outcome of learning was relating what is known to new contexts. In Understanding as Seeing the Whole having a "wider application" means that you "continue to learn" (Gemma, 92/31/B) and "...by coming to understand it and how it relates to other things that's how it builds into learning ... that's how understanding goes into it. ...you need the understanding which is part of being aware of how it applies..." (92/49/B). Similarly, Birgit understands learning as acquiring, processing "...and at any time whether it be sort of latent or immediate ... you can apply it in different sort of environmental situations. ...you'd be able to apply it in any situation..." (93/29/B) not just the one in which it was learned. She continues "... and I think being able to use it is like a necessary stage..." (93/29/B).
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a notion which suggests that applying (as comparing, acknowledging and thinking about something) is now an autonomous part of the process of learning rather than its outcome (Figure 7.2).

Relativity and Contextual Relevance

In parallel with the development of increasing plurality of relations, is a view of relativity that differs from those described previously. For example, ideas of relativity now extend beyond those that were concerned with the attribution of personal values or a focus on the different ways in which knowledge might be applied. They have become multi-dimensional.

This shift may be associated with learners' increasing awareness of contextual relevance and the situatedness of knowledge. In contrast to previous experiences, they understand now that the context of application affects what is known of the phenomenon. Understanding is "...knowing the inherent nature of something, its properties, ... and how it can ... be altered in different situations..." (Birgit, 93/51/B). Birgit understood properties to mean: "...the different aspects or facets of it, the way it can be changed, altered ... environmental factors or um yeah situational factors..." (93/51/B). Thus, the learner is aware not only that by looking at something differently other relations may be made but also that the situation in which learning occurs is itself of relevance to their understanding of the phenomenon as a relational entity. Peter provides further elaboration: "understanding ... [is] a very fuzzy concept ... it's very much individual interpretation. Everyone's going to apply different meanings. It's going to vary. ...it's not a concrete term like ... OK that's a chair" (92/83-86/A). This view of relativity involves the adoption of multiple perspectives:

... I think with learning you overcome that [narrow mindedness] and you see a lot more of the real ... issues and things that people don't really look at. ... a lot of educated people, ... they know a lot more issues than someone who is not willing to learn the issue. But they're [the latter] usually the ones that will debate it the most in the sense that they'll always be right and there's never another side to an issue whereas a person who delves into it more knows that there's usually more than one side to every issue (Ingrid, 92/25 - 27/B).

Ingrid's "...there's usually more than one side to every issue" (92/27/B) provides an example of how relativity now extends beyond the learner as an individual.
The change from a focus on different contexts of application to the effects of
different contexts on the phenomenon is accompanied by a spatio-temporal
extension of the application of knowledge. For Ingrid "...learning is when you go
to something and you know that you've never heard of it before ... it sort of
broadens your horizons on the world" (92/25/B). Gemma considers learning to be
a "...wider appreciation of what ...[knowledge] is all about... [its] relevance and
how to apply the knowledge that you have..." (92/27/B). These views suggest an
awareness of broadening horizons and a 'spatial' widening of the learner's focus of
attention. Learning is now not only associated with the current context, but is also
strongly oriented towards the future and rooted in past experience.

The Nature of Knowledge

These learners' more dynamic view of learning is accompanied by a more malleable
characterisation of the nature of knowledge (see Table 7.2, p. 235). "[K]nowledge
is meaning..." (Anya, 91/81/B) and students understand the meaning of something
as related: its structure is viewed as a network of relations. For Anya meaning was
the entire relations of the knowledge: "...nothing is in isolation..." (91/79/B).
Moreover, this characterisation of knowledge reiterates the idea of the meaning
behind the concept (knowledge) that was discussed earlier in relation to
Understanding as Relating: "...knowledge is the meaning of what is said not
what is said, ... in fact there's no point in you knowing something if you don't
know what it means. That's not knowledge ... that's just rote learning" (Anya,
91/81 - 82/B, her emphasis). Thus these learners also see knowledge and
understanding in an integral relation. For example, knowledge is conceptualised as
"...an understanding of a whole concept and how the whole concept works..."
(Gemma, 92/67/B) in its context. It is interesting to note that a view of the whole
becomes the referential aspect of Understanding as Seeing the Whole.

In line with the focus on meaning, knowledge is what it "...mean[s] to you
as opposed to what ...[it] might mean to somebody else..." (Anya, 91/81/B).
"[M]ostly knowledge is ... people taking information and arranging it to their
perception of what they see of the world so it increases their perception of the
world..." (Anya, 91/85/B). That knowledge is personal means that "...there are no
absolutes are there? I don't think you can state many absolutes." (Anya, 91/85/B).
This understanding of knowledge is consistent with these students' notions of
relativity (Table 7.2).
Constructive Experiences of Learning: Understanding as Relating

Acquiring Knowledge: Developing Skill and Autonomy

In parallel with other aspects of *Understanding as Relating* students' approaches to learning are becoming increasingly more skilled and autonomous. Learners talk of and adopt multiple relational strategies including comparing, acknowledging, imagining and thinking about what is to be learned. They approach learning with an intention to understand. Anya's focus on the underlying concept is evident again: "it's like with maths, ... if somebody just gives me an equation then I'll always have trouble doing it until I can really understand what goes on behind" (Anya, 91/52/B). Anya must understand what the equation represents in terms of its central meaning and relations:

It's usually easier if you've got something to hang something on. I mean if you already have some knowledge yourself then if they give you new information you've somewhere to put it so it's always easier if you ... know something about it before you have it (Anya, 91/41/B).

Anya comes to an understanding by "...a combination of things". She gets "the idea in the lecture" and reinforces it "through general reading and through specific reading..." (91/54/B). If she fails to understand something she has "...to just go through it visually and try and get a picture of it in ... my mind of what really happens" (91/54/B). These students seek strategies that provide "something to hang something on." and "...a picture of it in my mind of what really happens..." in order to relate what is to be learned with their previous knowledge.

Anya's "...know something about it before you have it..." (91/41/B) is a characteristic feature of this category. Kate provides another illustration. For her "acquiring knowledge" involves acknowledging the knowledge itself: "like ... this is what's happening here, [you] recognise it..." (93/45/A). She finds difficulty in expressing her point about lack of prior knowledge: "...if you don't recognise it ... [if] it's sort of new, ... this is getting very complicated". For Kate, recognition "... [makes] you think, and ... you remember it" (Kate, 93/45/A). These passages point to something akin to Meno's paradox: one of the fundamental problems that all learners face. How do you get to know something when you have no previous knowledge of it? In *Understanding as Relating* the learner's response is that "...all things are related in some way. I mean, even if it's like really broad, like oh this is like to do with Uni, or this is like to do with ... the cat or something like that, yeah it's to do with something that you already know about in some way" (Kate,
Constructive Experiences of Learning: Understanding as Relating

93/50/A). The process of learning/understanding involves seeking/making a relation (see Table 7.2).

Birgit, who conceptualised learning as acquiring knowledge, provides a different example:

*So acquiring [knowledge] ...how d'you see that...?*  
...just observing, seeing, hearing, feeling sometimes, just you don't really need to be told something ... in a direct way ... you can be sitting down and all of a sudden something will just dawn on you from maybe TV. ...it can just be a comment someone says and it leads ... you [to] think about something and you learn it, process it, process it in that you think about it and you sort of think well what if, if this then this and if that then well, well this and then it will come again whether it be twenty years or two minutes later (Birgit, 93/31/B).

Acquiring knowledge is achieved by thinking about something. Note the reasoning process adopted in this passage: "...what if?" and "...if this then this and if that then well, well this..." (Birgit, 93/31/B). In *Understanding as Relating* acquiring the meaning behind the concept is concerned with forming hypotheses, and deducing outcomes by making relations. The notion of meaning is central to this process: "...meaning is very important because that's the way I best learn" (91/75/B). Meaning is "...the underlying concept ... the real implications of the information ... that applies ... to other things ... the other information you already have. ...nothing is in isolation. ...yeah it's important in tying together other ideas (Anya, 91/78-79/B). Anya uses the words understanding and meaning synonymously.

Furthermore, and in line with their growing awareness of the process of learning, students know that acquiring knowledge involves active participation. They understand that they must make the relations and they distinguish between the agencies involved in the constitution of meaning. For example they refer to the given meaning and their own meaning. Alison distinguishes between her meaning in terms of life goals and relevancy and meaning in terms of the topic:

...there's the meaning of what is relevant to you, the meaning of the topic. ...they are distinct because ... you may have a meaning that's relevant to you but it's completely irrelevant to the meaning of the topic. And ... I think a lot of people get confused and misled by that. They expect one thing out of something and ... therefore they completely miss the meaning of what's going on..." (Alison, 93/81 - 86/B).

Meaning differs for different people because personal relevancy is a key factor. Kate comments: "...the meaning ... comes from what you already know and ...
whatever the thing is, where ever that thing fits into your belief system and that's what meaning is ... its relationship to what you already believe" (93/101 - 102/A).

This experience of learning includes a growing sense of self-esteem and confidence in learning: affective aspects of learning that are more evident in the second experience reported in this chapter—*Understanding as Seeing the Whole*.

**The Role of Memorising and Remembering in *Understanding as Relating***

Learners' experiences of memorising and remembering support this relational view of learning. The two aspects of learning are not only integrally related with each other but they are also concerned with making relations. For example, what is remembered are the relations, and remembering influences learning because it acts as an aid to recall other relations. Memorising for understanding is associated with making relations and the learner's intention when memorising is to aid the development of relations.

In structure, the association between memorising and remembering resembles to some extent the circularity that was evident in *Learning as Reproducing*, and *Learning as Relating: Remembering How*. However, in those earlier experiences, memorising and remembering were reproductive strategies: acts that were synonymous with the central referent of those experiences of learning. For example, in *Learning as Reproducing*, what was made figural was memorising the given relation. Moreover, learners showed relatively little awareness of the act of learning, and the approach to learning was characterised by a limited number of strategies. Within the circular type structure, memorising and remembering tended to be conflated and learners focused on either one or the other and/or used the terms interchangeably.

In contrast, the referential and structural aspects of memorising and remembering in *Understanding As Relating* differ from those earlier experiences in a number of ways. For instance, acts of memorising and remembering now focus on the meaning of knowledge: the acquisition of understanding that is embedded in its larger relational context. The learner is more aware of the processes of learning and of the way in which these functions differ: "well memorising is more encoding ... the information, remembering is retrieval..." (Gemma, 92/54/B). Despite the technical nature of this definition, remembering and memorising are characterised qualitatively and the learner's awareness of the *mind* as an active part of the learning
process is evident. Students use a wider range and greater variety of strategies and skills and show increasing autonomy in their learning. For example, Anya described what she was learning about learning in psychology:

...it's certainly true [that memories are made up from many different areas] because the more different directions you come from in learning something, ... the better I'll learn it. So if I had a visual picture of something and I also have written it and I've also sort of heard it out loud ... and the more ways I can approach something the more likely I am to learn it that would fit in with ... the way the memories are laid down in, in lots of different areas so it's the stronger the connection. And also ... the more you go back on something the better you'll remember it because you're obviously laying down stronger chemical or electrical (however memories are stored which they don't know) ... trace so you know you can ... see that (Anya, 91/60/B).

In *Understanding as Relating* students distinguish between memorising for understanding and memorising for reproduction. In form, this duality resembles the distinction between rote memorising and reproductive understanding that was evident in *Learning as Reproducing*, but it differs in composition from the earlier experiences in terms of both the referent and in the learner's awareness of the act of learning. In general the learner is aware that memorising can occur without understanding but it is enhanced with understanding:

Well ... ultimately you can't learn anything without remembering ... 'but rote memory in itself isn't learning. Learning is understanding not remembering facts. So obviously memory is important but it's not the only thing. There has to be understanding as well ... [and] ... understanding enhances memory (Anya, 91/61; 73/B).

Memorising for understanding focuses on understanding knowledge and its relations: "...if I was to better memorise something, I would want to understand it." (Gemma, 92/55/B); "whereas understanding ... you can still learn it to remember it for your exam ... but it's not a case of ... remembering it on its own. It's related to other things" (Emily, 92/56/B); "...if you really had learnt it, ... it would all be in your mind, sort of all inter-related, you'd know OK well that's what this is and these are all the little aspects and things..." (Kate, 93/86/A).

Learning no longer just happens as it was seen to do in earlier experiences. Learners are involved in learning and they are aware that understanding requires work. For example: "...when you understand something you understand it because you're making that little extra effort to understand because perhaps it's interesting to you or you genuinely do want to pass the subject and you're
interested in the ... topic (Alison, 93/78/B). They understand that the mind takes a leading role in learning:

...well to give an example, when I study I find a very good way of learning a lot of facts is ... to ... turn it around and write it in my own words in a short form. I have to have the meaning of what's been said. And also for some reason writing things down seems to help fix them in my mind so ... by working with what I've got and ... having to use my mind to rewrite it and get the understanding, the meaning of what's been said. You can't ... rewrite it in your own words without having the meaning, it's something that's very important... (Anya, 91/76/B).

Anya rewrites what she learns in her own words to gain understanding and meaning but this activity is also a form of memorising strategy to help her fix it in her mind. However, she "...can't rewrite it ... without having the meaning...," and she cannot "...fix [it] in her mind..." without understanding what she is learning, that is seeing how it relates to other ideas. Gemma approaches learning similarly. She "...remember[s] things a lot better ... if I've clarified it in my terms..." (92/51/B, her emphasis). "To get understanding ... I just need to simplify it ... get the idea straight in my head..." (92/52/B, her emphasis). Clarifying means to "simplify the idea ... into like one concept rather than I'm in the words..." (Gemma, 92/53/B). Kate responds similarly. If she wants to understand something she must try and rephrase it and put it into her own words "...so that ... you've thought about it and you think OK well that means this and that's ... this..." (Kate, 93/92/A). Kate appears to adopt a similar reasoning process to that which was mentioned earlier (see Birgit, 93/31/B, p. 243). She seeks her "...own understanding..." (Kate, 93/98/A). Both students focus on understanding the idea or concept rather than taking in "the words" (see Gemma, 92/53/B above) from an external source.

In contrast, reproductive memorising does not include understanding: "if I was just to memorise it if I needed to regurgitate ... say in an exam or something, understanding may not always come into that..." (Gemma, 92/55/B); "...memorising something doesn't necessarily mean you understand it..." (Kate, 93/91/A); "...memorising is ... you sort of learn it as it is. It's unrelated, it's just straight memorised..." (Emily, 92/56/B); "...you can sit there and look at a whole page of print and memorise, and memorise like say a definition word for word, (Kate, 93/91/A); and, "...to remember something that you haven’t really learnt ...

1 In her use of the phrase, "in the words" Gemma is making a distinction between understanding the concept and the loss of clarity that comes from a focus on single words.
you can use those memory aids and things and create some sort of silly association ...
" (Kate, 93/85/A). However, for these learners the fact of having understanding precludes the use of these strategies.

In this view of learning, remembering is understood to have a number of functions. First, remembering plays an influencing role: "...influencing ... the situation, influencing what you've gained..." (Birgit, 93/58/B). It influences learning by allowing the learner to relate new learning with what is already known thus providing a larger base or context (Table 7.2). This notion of remembering, though entirely congruent with these learners' views of learning and understanding, differs from that which is evident in previous experiences.

Second, remembering is understood to act as a trigger for the retrieval of further knowledge from memory. The mind is understood to be continuously engaged in working at making associations through analogy and simile, recognising or acknowledging similarities and triggering more associations (see Birgit, 91/31/B above). A trigger is: "something associated with what you've learned, understood ... your mind straight away is working, ... acknowledging it, think(ing) about it, 'oh that sounds like that and now I remember now' (Birgit, 93/60/B). Note the difference between this notion of "trigger" and that of Learning as Reproducing which was some kind of assessment task.

Students relate imagination with remembering. For Alison it was important to "...remember things by understanding them..." (Alison, 93/75/B). She commented: "...another study technique I tried was using examples in the real world like I'd say, oh well imagine that we've got this, and then I'd sit there and think OK well if that theory is applying here what would happen ... it's very time consuming but it works" (Alison, 93/75/B, her emphasis). In this passage Alison demonstrates another relational strategy for learning/understanding. She uses imagination to apply learned knowledge to new situations, not to seek new situations where the knowledge can be applied but to understand "what would happen".

The Relation Between the Act and Object of Learning

In Understanding as Relating the nature of the object of learning reflects the characteristics of the act of learning described above. For example, students focus centrally on the meaning of specific knowledge and relate it to knowledge they
already know. They demonstrate a broad context of application including an awareness of how the knowledge relates to their own processes. In the following passage Birgit talks about how she understood individual difference:

...well one friend in particular ... I've understood that she is ... very intelligent ... and when she comes to me for answers, she's not coming to me for answers, she's coming to me to talk to me, to sort her own thoughts out, ... to get some, I don't know, words of wisdom from me ... and that's all I'm doing for her ... I'm not really doing anything for her in the way that I thought I was or thought I could... See I can see a lot of myself in her ... when people give me advice ... I acknowledge that but I never take what anyone says to heart. I make my own decisions about it. And I think I assumed I was better than everybody else and that I could do it but no one else could do that and I've understood that you sort of have to respect other human beings in that they've got a mind of their own. I can't manipulate everybody (laughter) (Birgit, 93/50/B).

In the following example that focuses on causes of injuries and worksite accident investigations, the object of learning is knowledge of worksite accidents in the larger context. Note how Harriet assembles the different parts of example to explain how she understood:

I understood ... the processes that should be used in reporting accidents and ... more specifically how to fill out [the] Form 7 work site accident report etc. [I also understood] .. how to research underlying causes and problems that cause an accident etc. ...finding out what the causes are and going away for example, to a library ... and looking it up, seeing what the immediate effects are and then relating that back to what the effects are on an individual or to who ever. ...you can't just blame an individual for an accident. You have to consider ...other factors for example, the actual workplace itself, the design of the work place, the structure, nature of the task... ...What was the significance of that [learning] for you? ...it teaches you not to just immediately jump to conclusions without backing up with evidence and research. Not to just look at ... one factor, [but to] consider everything before you make a judgement (Harriet, 91/80-83/A).

Later Harriet argued that understanding:

...might not necessarily be knowing everything but you have an idea ... of what something is trying to say or what the significance is, ... its implications. ... [U]nderstanding is ... you may see all [the] different perspectives. You may not necessarily agree with it but you can accept it and you can see it for what it is (Harriet, 91/88-91/A, her emphasis).

For these learners the object of knowledge must have clarity and logic: "...when I do reach the point of understanding a maths problem ... I can follow how it's done in a logical process. I can stand ... anywhere on any side of that problem and look at it and successfully do it" (Alison, 93/72/B). Alison's comment heralds the experience that is described in the second part of this chapter.
Constructive Experiences: Understanding as Seeing the Whole

There is a coherent relation between Understanding as Relating and Understanding as Seeing the Whole. In both experiences learners focus on acquiring understanding and there is sufficient overlap in the data to suggest that the first view of learning may be a prerequisite for the second. In the first, students focus on understanding the meaning of knowledge and its part/part relations. In Understanding as Seeing the Whole, the making of part/part relations tends to be assumed and automatic. Learners understand that the way in which knowledge relates will inevitably make a whole and it is the sense of this whole that they seek. Thus the focus of the act of learning has changed from understanding the knowledge together with the context in which it is embedded, to seeing knowledge and its context as an integrated whole: its whole/part relations (Figure 7.3).

Figure 7.3: Summary of the Act and Object of Understanding as Relating

The experience of Understanding as Seeing the Whole is more fully illustrated in Case 7.2.
Case 7.2: Understanding as Seeing the Whole

I'm happy when I'm learning. I enjoy it. I'm a curious person so I like to find out about things and I like to understand what I learn. Learning is acquiring knowledge of things around me, expanding my world in different ways. It's discovering things for myself, coming to understand things that I didn't know before. You learn from experience and it's the experience that is learning itself. It shows you the value or worth of something and it has a truth for me that other learning doesn't have. It's an interactive process, like it's me in the environment. It's an interactive process, me in the environment: something that accumulates through my life. It's not just learning from a lecture. I'm learning all the time, through experiences I have and the people I meet. It's exciting because every day has the potential for learning something new and from that there'll be further learning, that might be useful later.

When I understand, I can look on things as a whole. All the ideas interconnect so instead of seeing a part here and a part there I can put it all together and see a bigger picture. It's visual, a network that actually becomes a whole instead of a lot of disjointed ideas. The pathways are connected so I can start at any point and get back to any other point. I can move all around it and still come back to the beginning.

I've learned a lot more about myself. If you can look at things in different ways and take things as a whole it helps you become a better person. It's being able to look into things from lots of different angles. In each course you look at problems in different ways and you can extend that to things in every day life. It increases your appreciation of everything because you're able to sort of look into things, not scientifically but a lot more thoroughly perhaps. It teaches you to analyse, and to think critically. Take the news, whereas before I just accepted it, I now ask is that really what happened? I find myself doing that all the time.

Note:

1 Characteristics of the learner.
2 Importance of experience in making personal meaning.
3 Learning is interactive or relational and entails the whole context.
4 Notion of lifelong learner, current and future orientation.
5 Learner anticipates experiences in which he/she can learn.
6 Focus on part/whole relations—the learner constructs the whole.
7 The quasi-sensory nature of understanding (e.g., Entwistle & Marton, 1994).
8 Knowledge is an object that can be manipulated.
9 Seeing the bigger picture makes you a better person.
10 Different angles and different ways.
11 Skill focus
Knowledge is the whole thing. It's made up of things that have meaning and until you can derive that meaning you can't understand it and you don't have that knowledge. It's meaning that gives knowledge its substance and makes it communicable, and to understand you've got to extract its meaning, the crux of it, the central idea. But knowledge is also plural, like it's knowledge of the world rather than the meaning of singular things - what I learned from my parents, what I've learned in the course, what's happening in different places. And it means different things to different people. Like psychological knowledge has a meaning for me. I might understand it, know its meaning, its worth and its use but for somebody who has never studied psychology it would probably be bits of information that don't mean anything to them.

I memorise when I don't understand. Like you can learn about something but you learn the wholeness of it, it's just learning facts but it's not really thinking about it, analysing it. I mean once I understand basic concepts I can adapt it through my memory to other things. Take the reactions of different chemical compounds. I understand the way they work and once you understand one type of reaction then it's a lot easier to relate it to others. Like just by thinking about the different components, the way that they work, the properties that they have, you can put it all together and it sort of clicks into place and you can see the whole of it.

| General observations on case:                                                                 |
|                                                                                             |
| • Focus on the whole: "I can look on things as a whole;" "Knowledge is the whole thing;" "you don't learn the wholeness of it;" "you see the whole of it."
| • The strong focus on experience and how it is characterised: "you learn from experience;" experience is "an interactive process;" "it's the experience that is learning in itself;"
| • The future oriented nature of learning: "from that there'll be further learning that might be useful later;" "Coming to know/understand."
| • Skill focus: "It teaches you to analyse, and to think critically;" "analysing it;" "by thinking about the different components." |

12 Meaning and knowledge are integrally related.
13 Understanding focuses upon the central idea.
14 Relative nature of knowledge.
15 Memorising and focus on the whole are incompatible.
16 Understanding can be adapted.
17 Adaptation is synonymous with relating.
In *Understanding as Seeing the Whole*, learning is "...the acquisition of knowledge ...learning from any experience..." (Carl, 92/28-29/A). Case 7.2 illustrates how learners are aware of and learn from experience. The distinction between understanding as process and understanding as outcome that was evident in *Understanding as Relating* has now become more integrated and difficult to distinguish. The learner's focus is to acquire an holistic understanding and like other developing skills, this facet of the act of learning has become a coherent part of its content and purpose. In contrast to earlier views, the nature of learning assumes more qualitative and affective characteristics. Learners speak of coming to know about, and expanding their world. Learning is associated with curiosity, inquisitiveness, excitement and enjoyment. The fact that each new experience is understood to contribute to learning now allows learning to be seen as a continuous process. Accordingly, learning is understood as coming to know or becoming, and the act of becoming is accompanied by the students' view of themselves as developing persons. Accompanying this focus is an awareness of the skill of learning: analysing, evaluating, and being critical. These characteristics are illustrated in Case 7.2. This act of learning is explained more fully in the sections below.

**The Referential Aspects of the Act of Learning: A Focus on the Whole**

The main referent of this act of learning is concerned with acquiring knowledge but unlike that quite limited earlier experience, *Learning as Gaining Knowledge*, this view of learning is relatively complex. Learning/understanding is "...finding out about something that you hadn't known before. ...expanding your world ...in different ways. ...just finding out about things that are around you" (Lotta, 91/37-40/B). Learners focus on seeing/seeking the "...bigger picture..." (Lotta, 91/38/B). Expanding their world allows learners to "...look on things as a whole rather than just parts of things, instead of seeing a part here and there you can put it all together and you can see a bigger picture of things that are around you" (Lotta, 91/38/B). The focus on relation that was an aspect of *Understanding as Relating* has now changed to a focus on the whole. Making relations has changed from seeking the links to "put[ting] it all together."
The Nature of Experience and Awareness

For these learners the whole is an object that assumes a quasi-sensory or physical, and malleable characteristics. Metaphorically, it is a concrete entity about which the learner is able to move. Like Lotta (91/38/B above) understanding for Anya is: "...some kind of visual picture ... of things when they actually become a whole ... instead ... of a lot of disjointed ideas but when those ideas join together and form a whole ... then that's when you really understand it because you can move all around it and still come back to the beginning instead of going off at tangents" (Anya, 92/50/B). Anya was asked to say more about the visual picture. She considers and then says: "...it's not a visual picture of anything I guess." However, she then supplies another visual image: "I suppose you could look at it a bit like a maze or something ... that interconnects, a lot of ideas ... that are connected, ...you have all those pathways but they are connected so one can lead back to the other, you can start at any point and get back to any other point" (Anya, 92/51/B). Peter sees learning similarly: "...it forms a network" (Peter, 93/42/A).

The learner's focus on the larger picture is accompanied by a centering on the meaning of the knowledge itself. For Carl, understanding is associated with an ability to "...extract the meaning from something..." and meaning is "...really important, really important" (Carl, 92/86/A). The meaning of the whole is associated with a sense of getting to the heart of something: "I guess that's ... where understanding comes in, is like ... when you understand something ... you're able to extract the meaning from something and you recall ... the crux of it ... the meat of the thing" (Carl, 92/86/A). Carl understood meaning as: "... the central idea behind ... anything ... what it is ... that gives the idea substance, ... and makes it communicable and understandable..." (Carl, 92/87/A).

The Validity of Personal Experience

An important facet of this view of learning is that one learns from experience. For Carl, an experience is, "...something that you learn from, where you see ... the value of an outcome, from being able to have already learnt the experience..." (92/31/A). Experience of this kind is related to notions of truth, worth and value: "...usually when it's like a learning experience, ... you can see the validity of it..." (Carl, 92/31/A). These data provide a context for the frequently used phrase,

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2 Anya's kind of thinking in action provides an example of the evaluative, analytical skills that are a feature of this experience (see also Carl page 258).
"...you know it..." These learners use "know" to describe an experience of understanding that has personal veracity.

**Life Long Learning**

In parallel with the notion of validity is a more general extension of learning into learners' lives. Learning for Cassie is "... acquiring knowledge through either formal or informal ways like formal ways of teaching, being taught something or other, ... for example, how to drive a car, something like that. ...or informally, you just discover things for yourself, learn about yourself, through everyday things ..." (92/28 - 30/B). For Peter it is: "...an interactive process. ...it's very much an individual with the environment whatever that environment may be. ...not just a particular thing ... it's the whole learning process within your life that's cumulative..." (Peter, 93/39; 42/A). The whole is no longer associated with immediate experience but accumulates (expands) to include life long experiences. Learning is "...something that's occurring always and ... it's going to be something that occurs until you die, you're never going to stop" (Peter, 39/93/A); and, "...I just feel like I'm learning all the time, like I try and learn from everything..." (Carl, 92/43/A). Learners now conceptualise themselves as life-long learners. Joanna explains further: "it doesn't have to be a specific situation where you would sit down in a lecture or at a desk ... it happens every day. ...experiences, people that you meet... It's the experience that is the learning in itself" (Joanna, 91/48/A). Joanna illustrated her comments³ with a reference to the interview situation itself: "...you're probably learning sitting here today listening to all these things..." (91/48/A). Learning is now an integrated part of learners' more general life experiences.

In *Understanding as Seeing the Whole* the learner is more aware that many things are unknown and it is the experience of the unknown becoming known that is learning. For Joanna, "...the experience that is learning in itself" is: "...coming to know about, ... it's a coming to understand about things that you don't know." (91/48/A). It is this unknown-ness that provides the excitement and curiosity in this view of learning. Joanna describes how she sees it: "...you learn everyday and every day is something new ... something that you may not have known about... Because you don't know what that day's going to bring so in that sense

³ Students who understood learning as *Understanding as Seeing the Whole* tended to provide the principle or proposition i.e., "learning is" and then they made reference to experience or example. This characteristic is discussed further on page 257.
it's new because you've never experienced it before, you haven't lived through that
day before so in that way you're learning" (Joanna, 91/49/A). Carl describes a
similar experience: "...you go into something ... without any knowledge of what
you're about to experience and you experience it and usually at the time you're
aware ... that what you've just experienced is going to be worthwhile realising, or
knowing or having knowledge of in the future" (Carl, 92/31/A). This passage
raises a potential dilemma that in Understanding as Relating was likened to Meno's
paradox. Here it has changed: one learns from experience and having learned one
can see the value of the outcome. Here there is no paradox because the learner
trusts the process.

These data suggest that the learner's referent in this act of learning has a
future orientation that has moved a long way beyond the foreseeable task. Learners
show an awareness of how experience of something different suggests further
learning. By "...[e]xperiencing a different way of life" you realise "...how much
you don't know and how much you have yet to learn as a whole" (Joanna,
91/48/A). The unknown-ness is part of that orientation: "...you can realise that
[what was experienced is] going to be beneficial later on. ...although sometimes
you ... might have a learning experience without knowing it, like you might just
experience something or sort of something will happen to you that ... at the time
you mightn't think that it's terribly useful but it might come up later on" (Carl,
92/31/A). These data suggest the making relations that was evident in Learning as
Relating: Understanding Where, and became a referent of Understanding as
Relating is now an autonomous aspect of the act of learning.

This experience of learning is dynamic and progressive. Unlike the views of
learning exemplified in earlier experiences, in Understanding as Seeing the Whole,
the learner's central referent is the phenomenal experience. The learner is vitally
aware of and open to her environment. For example, "...it's nothing specific, it's
not sitting down with a book, it's listening and ... it's being aware of all your
senses and using all your senses, seeing hearing, touch, taste, and smell" (Joanna,
91/48/A). Joanna's focus on the senses illustrates another characteristic of this act
of learning that was less evident previously. It conforms with the learners' focus
on the experiential aspects of learning.

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4 This characteristic of "being open" is more fully explored on page 258.
The affective dimension of this view of learning is evident in these passages. Learners who view learning as *Understanding as Seeing the Whole* show an inquisitiveness about knowing. They talked of curiosity, joy, and love of learning: "...I'm a curious person so I want to know things about everything, ... I like to learn so if I am learning stuff then I'm happier..." (Lotta, 91/42/B).

The referential aspects and structural relations of the phenomena that constitute this experience of learning are summarised in Table 7.3. The Table illustrates the strong experiential focus of this act of learning.

**Table 7.3: The Referential Aspects and Structural Relations of Understanding as Seeing the Whole**

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Understanding the bigger picture, acquiring knowledge of the whole and its parts.</td>
<td>Seeking and constructing a whole to expand one's world.</td>
</tr>
<tr>
<td>Memorising</td>
<td>Memorising is using a number of different strategies to manipulate understanding and make relations—it is enhanced by understanding.</td>
<td>Knowing the relations (understanding) allows you to look at it differently.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Understanding.</td>
<td>Relating it to other things — using the imagination.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Experiential: 'knowing' the whole and its parts—a focus on coming to know or becoming (explicit skill focus), developing as a person.</td>
<td>Each new experience contributes to learning so learning is a continuous process.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Learning (broadening the knowledge) is achieved by understanding the whole.</td>
<td>Relational and relative - the relation between understanding/learning differs according to the context in which it occurs.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>The worth or substance of something.</td>
<td>Finding the central idea that gives it substance.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge is a whole phenomenon.</td>
<td>It can be looked at in various ways and manipulated.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Knowledge has height, depth and breadth and different angles and relations.</td>
<td>Focus on the whole and its parts.</td>
</tr>
</tbody>
</table>

**The Structural Relations of Understanding as Seeing the Whole**

The structural aspects of *Understanding as Seeing the Whole* include a view of knowledge that is increasingly plural and relative. These characteristics were evident in *Understanding as Relating* where the learner focused on multiple relations. In contrast, here the focus on the *whole* includes a view in which the existence of multiple perspectives is assumed. The structural relations of *Understanding As Seeing The Whole* are summarised in Figure 7.4.
It is by understanding how the learner sees the whole and expanding one's world that the structural aspects of this view of learning become evident. For example, Anya considers learning to be: "...expanding what knowledge you have to wider areas, or to a much lesser degree, occasionally learning something, I mean putting some new concept in your mind, but usually it's the expansion of something you already have some ideas of, broadening of knowledge" (Anya, 92/31/B). Learning is understood to be the broadening of knowledge, and understanding is the vehicle by which this is achieved. This characterisation of understanding explains its active nature. The learner's approach to learning is through understanding (Case 7.2). Anya's tree metaphor was used previously. Here it illustrates her conception of learning: "...a main idea like a trunk and that builds out into branches and twigs and leaves" (Anya, 92/35/B). Again she evaluates her response and adds: "But not like a tree in so much that it's not an individual thing because it joins on, there is nothing that's in isolation. So everything would join it at some point with something else because ideas usually link or new learning usually links two old ideas together." (Anya, 92/35/B). Her focus is on the whole but to know the whole one must actually have understood the relations: "...you can't broaden your knowledge without understanding ...it's the application of new ideas with understanding to expand something that's already known. ...to apply a new idea or

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5 See footnote 3 page 254.
Constructive Experiences of Learning: Understanding as Seeing the Whole

a new concept to something you already have in your mind..." (Anya, 92/55 - 56/B). Carl provides further illustration. Understanding is:

...being able to combine the different aspects of something, making it sort of whole, in your head. ... it just ... is able to make a lot more sense. ...when you understand it you're able to ... apply the same type of thinking, the same application of different things to a whole ... and then ... using the same types of processes ... being able to use similar techniques in different experiences maybe ... like ... say you encounter something and it's a problem and you learn from it and you understand the problem or you understand the solutions that you devise for the problem. You can ... take those solutions ... or that analysis, and take it to another situation and be able to sort of change that, ... you reach a deeper level of processing something (Carl, 92/67 - 681A).

Similarly for Lotta using an example from chemistry:

I understand the way that ... [the different chemical compounds] work ...once you can understand one type of ... reaction then it's a lot easier to relate them to others so that you can understand the other[s]. ...how did you come to that?

...well just by thinking about the different components, the way that they work, the properties that they have and you put it all together and it sort of just clicks into place and you can see what the final result will be (Lotta, 91/55 - 56/B).

The manipulation of the whole allows the learner to see things in different ways. "If you can see things in different lights ... I think it helps you become a better person if you can see things in different ways and take things as a whole" (Lotta, 91/42/B). This structure resembles the transformative experiences that are described in the next chapter. Here Lotta focuses on looking on or at things as a whole as a means of expanding her world or opening her mind. The notion of better person is "...you're not so narrow minded if you can look at things it helps open your mind to different experiences..." (Lotta, 91/43/B). Seeing the bigger picture is: "...having knowledge" (Lotta, 91/42/B) that includes multiple perspectives. For Peter, understanding allows him to have "a look at the topic from all areas so it's not biased towards one area which produces a warped view of reality..." (Peter, 93/66/A). Having a more open mind enables the learner to "...relate to different people, make new friends and ... just basically expanding your horizons, looking at totally different new things and understanding them" (Lotta, 91/37 - 43/B). The notion of "open mind" is totally congruent with Understanding as Seeing the Whole, indeed the integrity of this act of learning appears to depend upon it.
The Skills of Seeing the Whole

The idea of personal growth or becoming a better person is a characteristic of this view of learning. For example, Carl's experience of higher education was that it provided the opportunity and the "...means of self, not exactly self-actualisation but just sort of self-improvement. ...for me it's more just the self learning and ... just having the avenues ... the opportunity to sort of have a lot more information about the world open to you" (Carl, 9212-31A). His view of self-improvement was concerned with intellectual advancement:

...analytical skills ... evaluation and judgement, ... becoming a lot more aware of different methods of analysing things. Um having ... being shown other ways of evaluating and analysing things and judging things on ... different criteria and just the way that each, like ... different courses will be asking you to look at different problems in different ways. And that can ... be extended on to just a range of different things, like sort of in to everything really.

So ... that's your experience?
Yeah, it's been handy being able to ... look into things from like lots of different angles ... that isn't a good way of expressing it because there's a lot more to it than that. ... it increases your appreciation of everything a lot more because you're able to ... analyse things and ... look into things ... a lot more, not scientifically but ... along those lines, ... a lot more thoroughly perhaps (Carl, 92/5 - 6/A).

In Understanding as Seeing the Whole, self-improvement and skill in learning is to analyse and think critically and these skills are at the heart of learners' experiences. There is a focus on comparing, contrasting, evaluation and analysis that is entirely congruent with the looking at and looking on something in different ways, that was described earlier. Cassie experienced higher education similarly:

[It] teaches you to analyse, to critically think ... for example, with the media, if you're looking at a particular news item, ... you tend to look at it and say, is what I'm hearing the exact truth? ...you know, to critically analyse something whereas before I think I would have just taken it and said yeah that's what it is, but to analyse and then critically think about it, to see its faults and its good points (Cassie, 92/6 - 7/B).

Cassie told how she finds herself doing this "all the time. I can't see a movie anymore without..." (Cassie, 92/8/B).
Students used these skills in the interview situation. For example, they often situated their description in terms of what something was not and contrasted it with what they thought it was. There is evidence that they questioned their descriptions and modified their responses as they proceeded with the interview (see footnotes 3 and 6). Learning and understanding in *Understanding as Seeing the Whole* involve thinking and figuring it out for yourself. Cassie does just this. When asked about the meaning of understanding, her initial response seems unplanned: understanding is "...being able to grasp a concept or something that you're being taught and to be able to put it perhaps in your own terms in your head, to think about something, and say, oh I know what that is. ...to figure it out for yourself..." (Cassie, 92/47 - 50/B). The recognition "oh I know what that is" resembles the experience of *Understanding as Relating* that was described previously. Cassie then enacts this same process within the interview setting by thinking about what she has just said. She explores how she understands and provides further explanation of the process of grasping and knowing. "I suppose grasping is the immediate response, like you get a piece of information..., you understand it, [and] understanding that concept is a more whole thing again" (Cassie, 92/47 - 50/B *her emphasis*).

She adds, "...well ... grasping and understanding, I think to grasp something you don't necessarily have to understand it fully, it's your first realisation, oh I know what that is, but to fully understand something is a deeper, a deeper thing..." (Cassie, 92/47 - 50/B). For Cassie, understanding is realising and understanding deeply. The first is an initial recognition and the second is to fully understand. Thus, for Cassie there are three facets to her experience of learning and understanding: first, she experiences understanding as realising; then learning; and a deeper understanding. This process resembles that of Carl in *Learning as Relating: Understanding Where*. Here it appears as a more automatic response in which the nature of the initial understanding has changed from the technical/contextual aspects of the task to a recognition of the embeddedness of the knowledge in prior knowledge.

In this experience learners conceptualise their role in terms of taking responsibility for learning. In contrast to earlier experiences, it is they who "see" the whole. Students show evidence, particularly in their use of language, that they are in control of their own learning processes, that they are becoming able. In the descriptions of their experiences they use active verbs and invariably adopt the
nominate case. They have confidence and an awareness of themselves as learners: "...you know you can learn..." (Joanna, 91/48/A).

The Pluralities of Understanding as Seeing the Whole

Understanding as Relating was characterised by an increasing focus on contextual relevance and a spatio-temporal extension. In Understanding as Seeing the Whole these characteristics are more holistically developed and coherently integrated into the act of learning. Learners show evidence of increasing plurality in their views of and approaches to learning and understanding. Thus the characteristics of seeing the whole apply not only to acquiring knowledge as the object of learning but also to the act of learning itself. They are exemplified in a number of ways.

First, learners are aware that the act of understanding is influenced by and integral to the nature of the knowledge area in which learning takes place. Cassie stated: "I like to understand what I'm learning..." however, "I just can't think mathematically" (Cassie, 92/53; 52IE3). Anya was asked about learning and understanding: "I'd see those as quite different things I suppose but it depends how you define learning". She explained:

I mean ... rote learning where you put an idea into long term memory doesn't have to have any meaning at all or you don't have to understand it but it's a lot easier if you do. So learning ... you could define as just having something that you've put into long term memory whereas understanding is connecting that idea in long term memory to other ideas to expand, to create something larger. But then again that's what I said learning was (laughter) before so it's a matter of semantics isn't it? (Anya, 92/52/B).

Anya supported her comments with: "...to me it's the context in which you would use the word... learning as in learning somebody's phone number or learning as in broadening of knowledge..." (92/53/B).

Another example of the emphasis on contextual relevance is associated with the pluralities in the meaning of knowledge. In Understanding as Seeing The Whole the learner understands meaning in relation to her experience of understanding, so meaning also assumes a relative stance. For Cassie, meaning is the worth of something in terms of the way it relates to other things: "...like a particular concept to fit has a meaning, if it's related to something in a way that helps you understand that ... is its meaning" (Cassie, 92/62/B, her emphasis). However, knowledge has plural meanings: "...to understand the concept it's important to know what it is, to understand what meaning it has, ... whether that be
like a semantic meaning for a word or its usefulness, ... its value I suppose could be its meaning and that in turn could have a meaning for me, in personal things or everyday conversation..." (Cassie, 92/64/B). These learners see meaning in terms of how it helps them understand and so meaning is understood in relation to different aspects of understanding.

Similarly, understanding is also seen to be relative: understanding accumulates and there are degrees of understanding something. Joanna, argued, "...for example, you can learn that God exists but you might not necessarily understand it but you can understand, you can learn it and accept it" (91/66/A).

**Remembering and Memorising and Their Relation to Understanding**

In this experience remembering and memorising were not figural. Students' understandings of these facets of learning revealed similar contextual variations in meaning to those mentioned in *Understanding as Relating*. Remembering applies to something that is understood, or something that is rote memorised, while the word memorising tends to be used in relation to a repetitive activity. Something that is understood is acquired through the use of memory but this activity is not always seen as memorising but rather understanding.

Like, *Learning as Relating: Understanding Where* interest is an important ingredient of remembering through understanding: "...I remember things well if I'm in a lecture and I'm interested and I'm listening and I have time to listen. Then I have no problem remembering" (Anya, 92/57/B). For Anya, interest was concerned with: "...something that captures my imagination..." (Anya, 92/58/B). However, if there is no interest or the workload is high, "...I have a big problem because I don't have as good a memory as other people for just sitting down and learning things..." (Anya, 92/57/B). Or, "...by being able to understand what I'm being taught means that I don’t have to learn it off by rote" (Joanna, 91/67/A). Here, "learning things" refers to a form of rote memorising, a "memory exercise" rather than "understanding exercise" (Joanna, 91/69/A). It was common in these data for students to indicate that they found rote memorising difficult. They preferred to understand: "...if I can't attach ... a meaning of a theory to ... myself it makes it tricky" (Carl, 92/85/A). Carl needed to know, "...what it ... means to me ... how much I can relate it to myself" (Carl, 92/85/A).

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Despite these distinctions it is understanding that remains the focus in these activities. "Once I understand basic concepts I can adapt it through my memory to questions. So that if you understand the concept behind what you're learning it's a lot easier to apply it..." (Joanna, 91/67/A). Here the memory is engaged in an adaptive activity, whereas the act of memorising is associated more often with "parrot fashion" learning. If knowledge is understood there is little need to memorise:

...I think they're different I think ... you've got memorising where you'd learn it parrot fashion and you've got understanding where ... you know it through and through, you can...
You can explain it as you said. (Laughter) So ... d'you think that ... you can memorise and understand something at the same time?
Yes, I think once you understand it then there's not really much need to memorise it because you know it, and you can relate to other things, whereas if you memorise it then you may be going part way to understanding it but you haven't gone the full step (Lotta, 91/63-64/B, her emphasis).

Memorising is only "part way to understanding" but understanding allows relations to be made. However in these data, there was also evidence that acquiring what is learned involved many different strategies and some of these could be likened to complex rehearsal.

The Holistic and Relative Nature of Knowledge as a Whole

In line with the more general move towards the pluralism and relativity that is part of Understanding as Seeing the Whole, learners' views of the nature of knowledge also assume these characteristics (Table 7.3). At one level knowledge is seen to be personal. Knowledge is: "... things that I know, things that I've learnt, things that I've experienced, what I know" (Joanna, 91/85/A). However, at another level, the way in which learners understand knowledge in the context of the whole is thematically consistent with the nature of this view of learning: "...knowledge is ... again the whole thing..." (Cassie, 92/66/B); "...taking things as a whole..." (Lotta, 91/72/B); and, "...It's ... knowledge of the world ... rather than [the] meaning of singular things, knowledge to me is more plural." Lotta, 91/71/B). For these learners, plural includes: "...the things that you learn about when you're ... little ... general knowledge ... and things that are going on in different parts of the world, wars and um just knowing what's going on around you, what's happening" (Lotta, 91/72/B).
Learners' experiences of knowledge support the more relative nature of learning in *Understanding as Seeing the Whole*: "my knowledge is different to what [my lecturer's] knowledge would be or what your knowledge would be ... and so the things that I know ... my knowledge have different meanings for me than the things that you know..." (Joanna, 91/85/A).

This focus on holism and contextual relativism is extended to the way in which knowledge is related to the whole phenomenon of learning (Table 7.3). Knowledge can only be understood in its context, that is, in relation to meaning and understanding: "...I guess knowledge is made up of components of ... things that do have meaning. ...and I don't really think you'd be able to ...know things until you can derive meaning from them. ...like, you couldn't really sort of have knowledge of something until you understand it..." (Carl, 92/88/A). Having stated the principle upon which he bases his understanding, Carl provides examples and summarises the principle again:

... just the word knowledge itself, you can use it ... in a couple of ways, like ... knowledge ... being wisdom ... um having it, or ... having knowledge like the way the police would use the word ... is just acknowledging something and knowing it. ...I think ... you have to be able to ascribe meaning to something ... before it could become part of your knowledge... (Carl, 92/88/A).

### The Relation Between the Act and Object of Learning

In this experience of learning, the object tends to be the "crux" of the matter. Joanna provided an example:

[In] the first half of the semester ... we looked at bureaucracies and I found that really interesting because I’ve had an experience of a bureaucracy. And one thing that sort of leaped out of the page at me ... was that in a bureaucracy it’s not the people that are the problem it’s the way that the work is organised. And I thought about that because at home in the office everyone criticised the next person up. You know they criticised the supervisor, ... who criticised the manager and everyone ultimately blames the manager but in fact he is being managed by somebody higher up. ...so it’s the way the work is organised not the fact that [the manager is] the problem... And it ... made me look at it differently, made me probably see him in a different light. And I think if I go back home ... for a couple of months just for work I’m going to think and be very different ...because of what I’ve learnt this year... (Joanna, 91/39/A).

Note the enactment of "...look[ing] at it differently..." and "...see him in a different light..." that are features of this experience of learning. Peter provides another example of the coherence between this act and object of learning. He is discussing
the distinction between social and personal empowerment and how what he saw "...in the field..." helped him consolidate his understanding of these concepts:7

...what I saw ... was that a lot of fieldworkers or community organisations ... were ... providing a little bit of personal empowerment and then not giving any social power. Or even sometimes there was only a very limited degree of personal empowerment. Like ... the xxxxxx ...they provide people with ...little packages of food and everything which is really lovely but then they also say, the trouble is, people seem to, once you get somebody on the list they never seem to get off it and they're wondering why! And you sort of think, it's obvious isn't it? ...you can see personal empowerment is providing a little bit of understanding for themselves and a little bit of increase in self esteem, a little bit of breakdown from learned helplessness. But I perceive that as being an increase in learned helplessness because they're shown what's occurring and then they're not shown how to get out of it. ... I don't perceive that as being personally empowering (Peter, 93/63-64/A).

These passages suggest that learners for whom understanding is Seeing the Whole are themselves empowered.

**Constructive Experiences of Learning—A Summary**

The experiences described in this chapter reveal a growing sense of competence and skill. Learners are gaining confidence in their ability to manipulate knowledge and gain understanding. Again we see the integration of the main referent of the first experience into the structural relations of the next. That is, the focus of Understanding as Relating—relating the parts, becomes a structural aspect of Understanding as Seeing the Whole. At the same time, the second experience involves a focus on learning as a phenomenon—seeing the whole. The foci on looking at something differently in Understanding as Relating and "being open" to the environment in Understanding as Seeing the Whole seem to be prerequisites (with developing skills) for the transformative experiences that are described in the next chapter.

7 'Community Psychology' in third year at University A required students to find a community placement and prepare a project for the principal assessment of that subject.
# CHAPTER 8

TRANSFORMATIVE EXPERIENCES OF LEARNING—USING THE MIND

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### Table 8.1: The Main Referent and Structural Relations of Transformative Experiences of Learning

Table 8.2: The Referential Aspects and Structural Relations of Learning as Looking at Something in a Different Way

Table 8.3: The Referential Aspects and Structural Relations of Learning Change and Development

Table 8.4: Summary of Experiences of Learning as a Constitutive Act

Table 8.5: The Referential Aspects and Structural Relations of Learning as Constructing a World View

Table 8.6: The Referential Aspects and Structural Relations of Learning as Constituting Self

Figure 8.1: Summary of the Act and Object of Learning as Looking at Something in a Different Way

Figure 8.2: Summary of the Structural Relations of Learning as Looking at Something in a Different Way

Figure 8.3: Summary of the Act and Object of Learning as Change and Development

Figure 8.4: Summary of the Structural Relations of Learning as Change and Development

Figure 8.5: The Structural Aspects of Learning as Constructing a World View

Figure 8.6: Summary of the Structural Relations of Learning as Constituting Self

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CHAPTER 8:
TRANSFORMATIVE EXPERIENCES OF LEARNING—USING THE MIND

Introduction

The experiences of learning described in the previous chapter centred on the acquisition of understanding. The development of skill in learning was an integral aspect of those experiences. In contrast, this chapter is concerned with experiences of learning as transformation. Students who understand learning in this way learn skilfully. These experiences involve some kind of personal transformation and skill is associated with the use of the mind. Learning is characterised as an experiential process: something that is continuous and connected with the self. Awareness plays a significant role and there is an automatic assumption that learning is a part of life, living and being human. Three experiences are described and each is either related to or builds upon the other: Learning as Looking at Something in a Different Way; Learning as Personal Change and Development; and, Learning as a Constitutive Act. The principal characteristics of the three experiences are summarised Table 8.1.

Table 8.1: The Main Referent and Structural Relations of Transformative Experiences of Learning

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<tr>
<th>Experience</th>
<th>Main Referent</th>
<th>Structural Relations</th>
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<tr>
<td>Looking at Something in a Different</td>
<td>By using intellectual skills &amp; having an open mind, one gains insight and is</td>
<td>By experiencing something new or different and adjusting to the difference you change.</td>
</tr>
<tr>
<td>Way</td>
<td>able to look at something in a different way.</td>
<td></td>
</tr>
<tr>
<td>Personal Change</td>
<td>Changing and developing as a person. Through learning you change the way you</td>
<td></td>
</tr>
<tr>
<td></td>
<td>think, behave or feel.</td>
<td></td>
</tr>
<tr>
<td>Learning as a Constitutive Act</td>
<td>1) Creating a way of understanding the world.</td>
<td>1) You construct your view of the world according to the knowledge you have.</td>
</tr>
<tr>
<td></td>
<td>2) Learning constitutes self.</td>
<td>2) You construct your understanding of the world and yourself.</td>
</tr>
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</table>

In the first, students experience learning as becoming aware of something that was previously unknown and this allows them to see something in a different way. In Perry’s (1970) terms, the learner has become committed to a different view or belief: a transformative experience that differs from the more relative position that was described in Chapter 7. In the second experience, learning is understood as
personal change that is associated with growth and development. In the first experience, learners provide examples of changes in attitudes, belief and behaviour but do not always recognise that learning has involved such change. In the second experience the learner understands that personal change occurs as a result of learning. I have treated the third experience differently. It comprises two case studies of *Learning as a Constitutive Act* in which learning is understood as the manipulation and construction of one's reality.

**Transformative Experiences of Learning—Learning as Looking at Something in a Different Way**

In this experience, the act of learning is concerned with looking at something in a new or different way. This kind of *looking at* differs from that described in the previous chapter where, predominantly, it was associated with seeing the different angles/perspectives. In *Learning as Looking at Something in a Different Way*, learning is experienced as placing oneself in a different perspective and from that perspective one is able to look at something differently. Thus the learner is situated in a different relation to the phenomenon. The act and object of learning are summarised in Figure 8.1. The experience is illustrated in Case 8.1.

**Learning as Looking at Something in a Different Way**

<table>
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<td>Referential Aspects: to look at something in a different way, to put oneself in a different perspective.</td>
<td>Structural Relations: using intellectual skills and an open objective, reflective stance, one gains insight and is able to look at something in a different way.</td>
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<td>Understanding a client: seeing how he sees—through his age, his race, his life experiences. Until you walk in his shoes you don't understand. You can be well meaning and well motivated but you don't have a true understanding.</td>
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Figure 8.1: Summary of the Act and Object of *Learning as Looking at Something in a Different Way*
Case 8.1: Learning as Looking at Something in a Different Way

I enjoy learning. I like to know stuff and I actually want to learn. When I learn I'm seeking something that I can use, not only in my work but in my life so it's self-guided, it's something I must do myself. Learning doesn't have to be in a formal setting. It's a very broad thing, it's about broadening my understanding of the world, giving me a broad range of life experiences. Everybody learns all of the time—it's opening one door to see a lot of other doors that need opening. It's a continual process, your mind is continually turning things over, taking notice, thinking about stuff. Learning is becoming aware of things that you've never been aware of before. It's having insight about something and then because of that you have more of an awareness of the possibilities. Like, there's different ways of looking at every question and it's that flexibility that insight that is vitally important to me. You really need as much perspective as possible.

You have to get out of yourself and look at it in a different way. It's to understand, to have empathy for a different perspective. I mean you can have a perspective on something but that can be damaging if you won't see beyond that. You have to have an open mind. You have to be open to different ways of looking at things. What's it like to be in that person's shoes? Where are they coming from? What's in their head? What was that writer thinking when he said that? What was the design of that study? What method did they use? Why did they choose to do that? People are very subjective about what happens to them. I think you've got to take a step back and be a bit more objective, look at it and see it in terms of the bigger picture—its parameters and broader context.

Learning means having a skills base, knowing how to use those skills, honing them. It's to do with critical thinking: using those skills to assess things, evaluating, and coming up with your own perception and beliefs about things. I think it makes you a better person. I like to take the time to think on things, reflect on them. It's through being objective and reflective that I get the perspective to have an understanding to be insightful and then I can ask the right questions. For instance, I look back and think about what happened and how I felt and maybe write it down. Like, I may become aware of something and I use it to say well I know this or that worked well. OK that didn't work, I'm not going to do this in future. Next time I should try this. That's learning, when I reflect on it, becoming aware of the problems and thinking to myself what ways might have worked better? And the more I learn the more questions I ask— it never stops.

Note:
1 Self-directedness of the learner.
2 Lack of boundary, learning occurs in any context.
3 Having insight provides the learner with more awareness.
4 Having multiple perspectives allows flexibility to see something differently.
5 Looking at it in a different way involves a metaphorical move to the other perspective.
6 Being fixed in one perspective is in conflict with looking at something in a different way.
7 Focus on an open mind.
8 Objectivity is metaphorical distancing: "to step back."
9 Skills are understood dynamically in terms of honing, sharpening.
10 Commitment to a belief.
11 The focus on self improvement.
12 The relation between skill and understanding: to reflect leads to understanding.
13 The reflective cycle.
It's really hard to separate learning and understanding.\textsuperscript{14} I think understanding relates to that empathy I talked about.\textsuperscript{15} I think you gain understanding through learning, knowing how to use those skills.\textsuperscript{16} You have to work at it - understanding is something that you have to maintain\textsuperscript{17} - it grows and changes.\textsuperscript{18} It's not something that you just get and then move on from. You have to constantly work at it.

Remembering? Well a lot of the issues we look at come up in every day life. I think a lot, and I use different situations I'm in, people I'm with to discuss things, try things out, rehearse ideas. It reinforces things in my mind\textsuperscript{19} and that's productive for every day problems too. What I'm doing the whole time is thinking about how things are related. Like when I read, I reflect back to other experiences, I dart all over the place, I don't think you can help that. I think I remember related things, you know a cluster of things and that could be quite broad. It could be something I've discussed with friends, it could be anywhere, and you think why is that and all of a sudden the answer's there.\textsuperscript{19} I don't think it's what people call memorising. That's very mechanical and doesn't involve any intellectual processes. It's just programming, testing say my mechanical ability to keep to a script.\textsuperscript{20} When I learn I need to see it in my mind's eye. I get a clear picture of it, what it is, what it relates to.

Knowledge can mean a number of things - it incorporates everything in your life. I think it's a collective body of understanding, the residues of all those understandings. A lot of people confuse knowledge with information. I mean if you watch Sale of the Century - those people can spit out bits and pieces of information. I think it's much more than that.\textsuperscript{21}

**General observations on case:**

- Active nature of learning: "I want to learn;" "I'm seeking something that I can use ... in my life;" "I like to take the time to think on things."
- Strong experiential focus: "it's about broadening my experience;" "It's having insight" and "an awareness of the possibilities."
- The ongoing nature of learning: "Everybody learns all of the time;" "it's opening one door to see a lot of other doors that need opening;" "It's a continual process;" and "...the more I learn the more questions I ask - it never stops."
- Looking at something in a different way depends on the capacity "to get out of yourself"
- Strong skill focus and the varied nature of the "skills base: being insightful;" "having an open mind;" "evaluating;" and "critical thinking."
- Reflective cycle in action: "OK that didn't work, I'm not going to do this in future. Next time I should try this." This is not a simple linear reflective process. Here the learner is constantly comparing what is with what is known.
- The range and nature of the skills that comprise the skills base: objective, reflective, critical, analytic, and open.
- The frequent use of meta-analytic skills.
The focus on skill in learning that became apparent in the last Chapter, now dominates the act of learning and so learning itself is understood as acquiring skill, and knowledge of how to use that skill in a transformative context. Learners' experiences of Learning as Looking at Something in a Different Way are more comprehensive than any of the experiences that have been described previously. Case 8.1 illustrates an act of learning that is all encompassing: a coherent whole rather than (from a first order perspective) what might be considered a single aspect of the act, such as remembering, or understanding. Learning is "...to know more about the world. ...it's experiencing new things. ...it's being able to take into account these new things" (Megan, 93/32/A). "I think that learning ... is a very broad thing and ... it's about experience, life experience" (Luke, 92/12/B); it "...opens up a whole world to me" (Elizabeth, 92/2/A).

These views are contextually consistent. The learner's relationship with knowledge has changed. For instance, in Understanding as Relating, the learner focused on discerning and making part-part relations. In Understanding as Seeing the Whole, the making of part-part relations became an automatic aspect of the act, and the learner focused on seeing the phenomenon as a whole. The fact that learning and understanding assumed a synonymous relation was consistent with these views. In Learning As Looking At Something In A Different Way, the relation between the learner and the act of learning becomes an integrated, whole experience. The learner now focuses on the whole in its broader context which includes both the past and possible future experiences of the learner and both the historicity and subsequent meaning of what is learned (see Case 8.1). Moreover, learning and understanding assume an intrinsic kind of relation where learning is associated with process and skill, and understanding becomes the outcome of the use of skill, that is, looking at something differently. For example, Elizabeth illustrates one aspect of the meaning of understanding in her explanation of the concept of one. Understanding is:

...knowing the concept. What's knowing? ...recognising the concept ... when you're trying to show a little one that this is 'one'. It is not a teddy bear or whatever it is you're holding, it is one, a number. And that I think is a big step ... when they understand the concept that this is one. Well that's what understanding in this course means. When I finally ... understand what the concept is ... what the parameters are, ...what ball park I'm playing in and what the concepts are of ...what I'm playing in that ball park (Elizabeth, 92/99-100/A).
Learning as Looking at Something in a Different Way

This passage illustrates the kind of transformation that is inherent in this experience. Knowing that the teddy can also represent oneness is an example of looking at something in a different way. Note also the analytic way in which Elizabeth focuses upon the topic. She makes a statement, questions it, and provides an example: characteristics that were constantly displayed by these students. Moreover, a concept is understood in terms of its context that comprises its parameters, its related concepts, and the broader field.

In terms of analysis, this sense of wholeness and the intrinsic nature of the relation between learning and understanding make the distinction between referent and structure less evident than that of previous experiences. Although the principal referent is looking at something differently, learners also understand learning in terms of the use of critical skills of analysis and evaluation, having a belief about something, and an open, active mind. These different figural aspects were illustrated in Case 8.1. They, and the structural relations of the phenomena involved, are summarised in Table 8.2, and described more fully below.

Table 8.2: The Referential Aspects and Structural Relations of Learning as Looking at Something in a Different Way

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>To see something differently. Acquiring and using intellectual skills to put oneself in a different perspective.</td>
<td>Ongoing use of skills—an open, objective, reflective stance to gain insight and look at something in a different way.</td>
</tr>
<tr>
<td>Memorising</td>
<td>To understand. Memorising is a tool—a skilful activity for learning and understanding.</td>
<td>Skilled rehearsal or practice through visualisation, comparison, reflection and critical analysis.</td>
</tr>
<tr>
<td>Remembering</td>
<td>An aid to reflection and further learning.</td>
<td>What is remembered is subjected to reflection in order to understand and clarify what is understood.</td>
</tr>
<tr>
<td>Understanding</td>
<td>To have insight, awareness of something, looking at something differently.</td>
<td>Coming to know something—a continuous process of growing and on-going comprehension.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Learning is continuous and skilled thus understanding is never complete.</td>
<td>Learning is the process to understanding and understanding is the outcome of learning.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Related network, is personally relevant and assumes an affective experiential quality.</td>
<td>Similar to understanding.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge is a dynamic and changeable resource—a collective body of your experience.</td>
<td>Knowledge has multiple meanings according to its context.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Knowledge is malleable and changeable according to the way you look at it.</td>
<td>You can change it</td>
</tr>
</tbody>
</table>
The Referent of the Act of Learning—A Changing Figure

The idea of multiple perspectives and looking at things in different ways constituted part of the referential aspect of students' experiences of Understanding as Seeing the Whole. However, in that experience, it was the whole as a knowledge object that the learner made figural and metaphorically, the act of learning allowed the learner to move around the whole and look at it from different angles. In contrast, in Looking at Something in a Different Way learners experience phenomena differently and it is this transformative experience that comprises the principal referent of the act of learning (Figure 8.1). As this focus is further explored the significance of the distinction between looking at something from different angles and looking at something in a different way becomes more evident.

For instance, Table 8.2 shows how, in this experience, both learning and understanding are understood in terms of looking at something in a different way. Elizabeth talks of understanding another's feelings. Understanding is: "...being empathetic enough to feel ... putting myself in your place ... to a certain ... not completely but ... finding out what it means for you ... how you experience it" (Elizabeth, 93/67-68/A). You are: "...putting yourself in a different perspective" (Megan, 93/33/A); "...I think you just have to ... get out of yourself ... and have a look at it from a different perspective..." (Luke, 92/13/B). Students talk of "...having empathy for different perspectives..." (Luke, 92/19/B), or experiences and "...finding out what that means for [the other]..." (Elizabeth, 93/68/A); trying to "...get into another person's head about what's going on..." (Luke, 92/13/B). Similarly, Joanna saw understanding as "...coming to know about something..." that she didn't know previously. "...to be able to relate that in some way to another person and feel confident about it..." (Joanna, 92/54; 62/A). Thus by "...becoming aware of things that you've never ... been aware of before..." (Diana, 92/28/A) they are able to see something in a different way (see Case 8.1).

Elizabeth provides a concrete example. For her, learning is "...discovering new things. ...and taking them on to what they mean for you" (92/55-56/A). She continues: "I've just decided at home that we're not going to have violent movies anymore" (92/57/A). She then describes how she became aware of the desensitising effects of violent movies on her family:

...take learning new things. ...just doing research for other things, I've been reading about the effects of violence and the effects of post-traumatic stress disorders ... that's the learning... Taking them on is - I've processed in my head, be it right or wrong, from what I believe and what other people have
said that this is going to desensitise my family... I mean you see arms being blown off ... and it's got to desensitise them somehow. So ... what I've learned ... has given me a belief about something or a theory about something, and I've made a decision according to the things I've learned (Elizabeth, 92/57-58/A).

This passage illustrates other aspects of the experience. First, the learner shows an awareness that she is actively involved in the learning process. Second, she is aware that she is looking at something differently and she offers a meta-commentary: a process that may be likened to a meta-analysis.

Belief and the Notion of Change

Elizabeth's example of TV violence also illustrates the way in which students become committed to a belief or value (see Case 8.1, and Figure 8.2). Structurally, having a belief or value may be an integral aspect of looking at something differently. For example, the passage above provides an example of a change in attitude and/or behaviour. Elizabeth evaluates knowledge from different sources, comes "...up with your own belief..." and looks at the situation differently. She comments: "Before I came to university, I would've just accepted without questioning. I would have said, oh I don't like that but not thought it through ... the reasons behind it and what I was going to do about it" (Elizabeth, 92/59/A). She contrasts her present action with previous behaviour and provides evidence of the underlying activity for the change; the "...reasons behind it..." She treats this episode as a problem to be solved. Decision making is involved.

In this example, Elizabeth is aware that change has taken place. However, in contrast to Learning as Personal Change and Development¹ this form of change appears most often in the data as an implicit outcome of learning. That is, the examples of learning provided by learners show that change has occurred but they experience it as looking at something differently. Students do refer to change but it is associated with changes in what is learned. For example, for Joanna: "...learning is change and so ... in order to understand it, it must change my knowledge² or change my learning in some way" (Joanna, 92/64/A). It is through learning something that understanding is changed. Jack provides another example: learning is, "...a change ... it's knowledge, ...not necessarily knowledge about a

¹ In Learning as Personal Change and Development personal change is an explicit aspect of the experience.
² Joanna illustrates this point. An important distinction is to be made here between a change in knowledge and personal change: an explicit feature of the next experience.
subject, maybe knowledge about myself ... when you know something you act on it ... it might be a change in attitude to something. You might become aware of something you weren't aware of before..." (Jack, 91/45-49/A).

Skill as a Referential Aspect of Learning

In the previous experience the skills of analysis and evaluation were seen to be part of learning. In Learning as Looking at Something in a Different Way the use of skill is now a principal referent (see Table 8.2). Learning is conceptualised in terms of developing and using skills: "...learning is gaining skills. ... or acquiring the knowledge of how to use those..." (Diana, 92/28/A); "I think higher education is ... honing particular skills..." (Carl, 93/1/A) and, "I'm seeking something that I can use in my life as well as in my work. ...that's what I think tertiary education is about." (Luke, 92/1/B).3 Luke's "something" comprises skill in learning: "...critical thinking ... applying your intellectual muscle not blindly but ... with some purpose" (Luke, 92/2/B, my emphasis). Carl expands the idea of skill in learning:

...learning, any sort of learning is aimed at improving, not specifically aimed at improving the individual but the outcome is that the individual is sort of improved in some way. ...like through learning you're building a skills base ... and that can be applied to lots of different things ... like learning can become very fluid ... like learning something in one situation can result in the ability to improve function in another ... by learning a specific skill you might ... acquire a general ability... (Carl, 93/61 - 64/A).

The learner recognises that Learning as Looking at Something in a Different Way involves the use of a repertoire of skills, "...a skills base..." for example, "...some ideas ... don't fit into any sort of schema and so they require a ... new way of thinking" (Carl, 93/38-41/A).

Carl refers to another aspect of the focus on skill that becomes much more significant in Learning as Personal Change and Development. These learners recognise that their repertoire of skill improves them in some way. "Acquiring the knowledge of how to use those [skills]..." is "to better your life" (Diana, 92/28 - 29/A). Through learning these learners become more competent and confident. Elizabeth commented that the program has made people "...look at themselves and question themselves and question who they are..." (93/12/A). She added that it had "...made me see outside myself as well. ...made me actually see people and find

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3 Luke was one of two students who studied part-time and worked full-time. He was the manager of a community based work experience program.
ways of just asking the right question ... I learnt the skills to ask the questions, to ask and to see" (93/12/A)

It is as if learners have come to understand learning in terms of their ability to manipulate the figure/ground relation, not only in terms of the knowledge object but also in terms of different structural aspects of the act of learning itself. Thus the structure of the act remains visible but the figure or referent is not only looked at from different angles or perspectives, but also changes according to its context. Moreover, it is this increasing repertoire of skill in learning that appears to provide learners with autonomy and control over their own processes (Case 8.1). All of these features are further explored in the structural aspects of the act of learning below.

The Structural Aspects of Learning as Looking at Something in a Different Way

In previous experiences the ongoingness of learning comprised one of its referential aspects. In Learning as Looking at Something in a Different Way this characteristic is now an inherent structural part of the experience. Learning is a continuous, dynamic spiral of growing insight and awareness: "...just opening one door to see ... a lot of other doors that need opening. It's ... a continuous process..." (Elizabeth, 93/43/A); "...everybody learns all the time..." (Luke, 92/12/B); "...learning occurs all the time..." (Joanna, 92/38/A). Figure 8.2 shows the ongoing nature of the experience and the relation between its different structural aspects.

Structurally, learning is concerned with having an open mind; using a range of critical skills; developing a commitment to a belief, value or perspective; and insight, that is, the capacity to look at or see something differently. Each new insight is subjected to evaluation and critical reflection because being open minded allows the learner to interrogate different perspectives and see something differently.

Learning is a change in behaviour. You learn something and what you initially thought may be different from ... well usually is different from what you've learnt or you gain more knowledge, gain more insight, another perspective, another way of looking at things. ... you're able to look at things in a different light. You're able to perceive things in a different way so therefore your behaviour's going to change. Rather than looking at
Learning as Looking at Something in a Different Way

something in one way you can turn around and look at it in another light ... So you're becoming open minded (Anna, 92/27-28/A).

Figure 8.2: Summary of the Structural Relations of Learning as Looking at Something in a Different Way

To Learn is to Understand is to Learn

Figure 8.2 shows the explicit relation between learning and understanding that is assumed in this experience. To learn is to understand, and to gain insight is to gain understanding. This structure reflects the distinction between understanding as process and understanding as outcome that was evident in the previous experience. Here, however, the relation is blurred. It is as if the learner assumes that understanding occurs as a natural aspect of learning. Understanding is "...part and parcel of learning or it should be" (Diana, 92/45 - 46/A). If learning is predominantly conceptualised as an act or skill, it follows that understanding becomes the outcome of learning. But since learning is on-going and continuous so understanding is an infinite phenomenon (Figure 8.2). Accordingly, understanding is "...coming to know..." (Joanna, 92/54/A) something, the knowing or "...dawning..." (Diana, 92/45 - 46/A) of something. But one's knowing can change and grow and is never complete. For Luke understanding "...means the ability to ask the right questions..." (92/24/B). Note the implicit assumption of skill in his comment:

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4 Note that this passage provides another illustration of the point made previously in relation to change. Despite the reference to a "change in behaviour" Anna focuses on perceiving something differently and being open minded.
I think understanding is something that needs to be maintained. It's not something that you establish and you move on from. ... I'm constantly working on [it] in what I do and what I learn. I'm constantly looking at [it] from different perspectives and the more I learn the more questions I ask about a particular problem..." (Luke, 92/24/B).

Thus the relation between learning and understanding has changed from that which was evident in previous experiences. The experience now assumes a spiral characterisation in which learning is interspersed with increasing escalations of understanding along the way. If learning is continuous and ongoing, understanding as the outcome of a learning episode changes as more learning occurs. It assumes exponential qualities whilst continuing to be an intrinsic aspect of learning. This relation is summarised in Table 8.2. It is also illustrated in Case 8.1.

Harriet attempts to capture the relation. For her, understanding is "...an awareness..."

...to get to understanding I think you need to learn ... there's a relationship ... between those two ... not a causal one but ...I think they're pretty much related. ... I think they're pretty hard to separate. Learning is something that I see as continuous and if you understand something, ... there's a point that you understand it and ... it sort of ends there whereas learning you can develop that on and it keeps going. And understanding, a general awareness or a basic idea of knowledge of something, ... and ... from learning you can then understand something and you can keep learning, I see it as continuous (Harriet, 92/114 - 119/A).

An analysis of the nature of the learner's conception of insight, awareness and an open mind provides further explanation of this relation.

**Being Aware, Becoming Aware—The Nature of the Open Mind**

Harriet understood learning as a combination of insight, knowledge and experience (92/53/A). Note the similarity to her view of understanding as "...general awareness..." in the passage above. She explains the meaning of insight: "... if you learn something it sort of paves the way for you to become more aware of situations, of other people, and ... you're more conscious of things around you and therefore you're sort of open to see things ... or see things that may happen..." (92/57/A). Moreover, "becoming aware" (Megan, 93/38/A) is "...opening up ... becoming more open..." (Megan, 93/39/A). The conceptualisation of learning in terms of an open mind was a feature of the experiences of learning described in the previous chapter. There, the open mind was associated with a more relative and plural view of the world. Learners understood open in terms of allowing for or being open to other views, angles or perspectives. In *Learning as Looking at*
Something in a Different Way the nature of an open mind changes to something that is more active, involved and continuously aware. Learning requires the learner: "...to be insightful..." (Luke, 92/24/B) and "...conscious of things around you..." (Harriet, 92/57/A). Elizabeth provides a further example: "...I find that the more I learn the more I'm open to listen to other people, to listen to different ideas..." (92/44/A).

It is as if these learners adopt an open or alert position or seek opportunities in which to learn. For example: "...there's a lot of stuff going on that you can learn a lot from if you take the time to think on it ... to reflect on it. I think a lot of learning experiences go begging simply because they're not recognised as learning experiences" (Luke, 92/13/B). This anticipatory stance not only allows them to learn but to be open to further learning situations. For instance: "I think ... you're generally more aware of things that are likely to happen and just perceive things in advance that you may not have seen before ... for example perceiving problems..." (Harriet, 92/57-58/A). The adoption of this position is also reflected in the learner's sensitivity to what is unknown: "...when I learn something ... it just makes me aware ... that there's heaps out there to learn, there's heaps of things that I don't know..." (Harriet, 92/68/A).

Moreover, for these learners, the capacity of the mind is something that must be maintained because learning occurs through its active use. This is Diana's experience. She illustrates it with Kingsley's story of the Water Babies in which "...all these people they'd turn into ... turnips because ... they just sat around and they did nothing," and she concludes: "...I thought well ... the day you stop learning is the day you die" (Diana, 92/31/A). She argued that "... you need to be challenged. ...your mind continually needs to be turning things over ... learning new things ... being challenged" (Diana, 92/32/A), and "I think you need to keep your mind open..." (Diana, 93/63/A).5 The notion of mind as active and open is an essential aspect of these learners' experiences. It monitors or scans their worlds and allows them to be continuously aware. This interpretation is reinforced in the description of the nature of remembering where the mind's eye plays an important role (see also Case 8.1, p. 271, and p. 285).

5 This notion of the mind as intellectual tool is implicit. It becomes explicit in Learning as a Constitutive Act.
Skill in Learning—The Questioning, Critical Mind

For these learners the active, open mind allows learners to be sensitive to difference. They are continually comparing what is known with what is new and it is this critical, evaluative approach that allows them to Look at Something in a Different Way. In the previous experience the skills of analysis and the ability to be critical were predominantly a referential aspect of learning. In contrast, here the use of skill is not only a referent but also an inherent aspect of the structure of the act of learning. There is evidence of skill in use to the extent that students are able to analyse the process of learning at a meta-level. For example, the course had taught Elizabeth "...to analyse a lot more" (Elizabeth, 92/29/A). She expanded: "...to look at people, not just at what they say but how they say it and ... to have some perception ... about them" (Elizabeth, 92/29/A). Learning is understood to involve the ability to question, and the intentional use of critical reflection, evaluation, and incorporation: a process that enables students to change existing schema. Learners are concerned with assessing and evaluating the evidence in a way that provides them with a belief about something. These three aspects of their skill base are described more fully below.

For example, Diana's "...turning things over.." (see Diana, 92/32/A, p. 280) is "evaluating". "If you said to me that black was white then I'd ... think ... OK so why do you think black is white? Can ... it be proven that black is white?" (Diana, 92/33/A). Evaluation comprises being critical, questioning the given and forming one's own belief about something. For instance: "...just assessing things, ... coming up with my own perception and my own beliefs about that ... making them more manageable and digestible" (Diana, 92/33/A); and "... I've learned to look at things ... rather than just accept, and question ... the subject matter of what I've learned, ... it's taught me to question and examine [more] ...a way ... of opening up my mind" (Elizabeth, 92/3-4/A). Elizabeth explains this position:

...you're shown so many different ways of looking at the same thing ... you're ... exposed to the different opinions so therefore you realise that [your view is] not necessarily [the case] and I think that's what teaches you to question... (Elizabeth/92/2 - 6/A).

In this quotation Elizabeth provides a possible relation between Learning as Understanding the Whole and this experience. Exposure to different ways and an
open, questioning stance constitute essential ingredients for these learners' transformative experiences. It is by comparing the different ways that learners are able to form a belief or position. For Anna, learning is concerned with gaining "...more insight, another perspective, another way of looking at things" (92 27/92/A). She thinks that it is "...really important to realise how ... [researchers and psychologists] arrive at ... [their] conclusions ... because it just can't be pulled out of thin air suddenly" (92/23/A). For these learners it is insufficient "...just being told something, that this is so. ... Erikson's decided this, or Cattell's decided this... It just seems ridiculous to have all this theory and nothing to base it on" (Anna, 92/24/A). For Anna, "...there's not much sense in ... just passively taking in everything if you can't be discerning" (92/25/A). In order to learn she needs to be able to see the other's position and compare it with what she knows:

...when you're reading through journal articles ... you've got to know how they've come to these conclusions, so that you can look at things critically, analyse them critically without having to ... think, what is this person going on about? ... This person must be right ...you know there's a lot of research been done in this area and he's highly known and supported and acclaimed and everything. And then if you can read it for yourself and critically evaluate it and you can only do that if you know how the actual design, the research has been conducted and designed (Anna, 92/24/A).

Anna seeks knowledge of the phenomenon in its wider context. She then subjects it to critical evaluation in order to understand it from her perspective. In this experience, learning is the "...acquisition of knowledge ... and being able to incorporate it into what you've already learnt in a meaningful way..." (Carl, 93/31/A). Meaningful involves the skill of incorporation or change to an existing construction: "...I guess it's like adaption of schema ... the schema that you have of different concepts and how things fit into that schema ... and ... that's why some ideas and some really broad theories are so hard to deal with initially ... because they don't fit into any sort of schema and so they require ... a new way of thinking." Carl, 93/37-41/A). Harriet identifies the process as reflection:

...you become aware of something ... and that information you use then to say, well I know this or I'm not going to do this in future or this worked well or this didn't. And ... I think it's the reflection [on] the information that you're given or the experience, ... that's the learning part of it...

...when you talk about reflection what do you mean by reflection? ...thinking about, ... like what's happened, ... what feedback I've been given, just thinking ... about what information I learned and also how I felt ... maybe writing it down or just thinking to myself, OK that didn't work that time, next time I should maybe try this ... or just becoming aware of the problems that happened and thinking to myself what ways might have worked better (Harriet, 92/92; 100/A, her emphasis).
Learning as Looking at Something in a Different Way

In addition to the use of critical skills these learners are aware of the need to anticipate outcomes. The notion of a skills base (see Carl, page 276) includes the development of a range of ways in which these learners respond to situations. This aspect of the experience makes the temporal nature of learning more complex. The future oriented nature of earlier experiences is now totally integrated into current experience. These learners are able to evaluate possibilities—what might happen, and plan in the present, for that eventuality:

...if you become aware of something ... then you can anticipate problems, you're able to develop plans or strategies that may reduce those problems now or when ... if they arise you can deal with them adequately ... if I learn something ... I'm more conscious of possibilities, ... I'm more open... (Harriet/92/53 - 63/A).

Seeing the Bigger Picture—Being Objective

The idea of placing oneself in another or the other's perspective was discussed previously as part of the principal referent of this act of learning (page 269). In this experience the capacity to see something from another's perspective is also associated with stepping back or distancing oneself from the phenomenon. For example, "...I think sometimes if you can sit back and try and get into another person's head about what's going on I think that that's important. ...you can learn from that. ...if you can step back and just have a look and just see the, the bigger picture" (Luke, 92/13/B). These students' descriptions of standing back in order to look at it (Case 8.1) appear paradoxical given their deep analytic engagement in learning. However, this characteristic of the act of learning is logically coherent. Reflection upon and evaluation of the whole requires a spatial distance from the phenomenon. If one looks at the phenomenon from within it may not be possible to look at something in a different way. To be aware of a different way the learner must adopt an objective stance: a metaphorical standing back in order to question the knowledge. In the example below, Elizabeth discusses how she critiqued a training needs analysis:

I started to think more and react less. ...instead of just panicking and finding books and saying what do they say, what do they say, I'm stepping back and ... thinking of content and process. What did I do? I did that. What did I achieve in the content? Write it down in my words first. And then find things that can expand on it. ... And ... I found that ... there was a lot of things that I hadn't considered...

...you mentioned content and process...

Um the question [in relation to training needs analysis] says ... what were the outcomes of how we went about it? So ... I stepped back and ... thought what had ... we actually ... done? ...you know, there w[ere] things involved in that that were different (Elizabeth, 92/50 - 52/A).
Learning as Looking at Something in a Different Way

Luke provides further illustration, in a discussion of the relation between learning and understanding: "...I believe that learning goes on all the time and it means the ability to be objective or to be reflective. You gain an understanding through being objective and reflective, through learning, which gives you the perspective to have the understanding". He added: "I don't think that has to happen in a formal setting" (92/21/B). This kind of objectivity or distancing is more a characteristic of the second form of this experience than it is of Learning As Looking at Something In A Different Way.

Memorising and Remembering as Skilful Activities

In Learning as Looking at Something in a Different Way, memorising is understood in terms of committing something to memory. But just as learning is conceptualised in terms of skill, so is memorising understood as a tool for learning. Just as in order to learn, the learner assesses, compares, and evaluates so the act of committing to memory involves similar skills that vary according to the perceived task. That is, memorising like learning is understood as skilful activity that is a necessary aspect of the act of learning. Memorising and remembering strategies include different and quite sophisticated forms of rehearsal and reflective activities. The characteristics of memorising and remembering are summarised in Table 8.2.

Students understand memorising to be integrally related to remembering and meaning. Luke illustrates this experience in a discussion about remembering: "...when I read stuff or learn stuff ... I tend to think a lot. ...what I'm doing the whole time is ... thinking about things that are related. Um a lot of times ... I do a bit of rehearsal..." (Luke, 92/25/B). Luke uses a discursive form of rehearsal to think through (remember) and understand:

...issues that I'm learning in psych come up in everyday life. ...I've had staff room discussions about some of the stuff ... because ... we've got clients... or it's just ... one of those everyday problems that everybody talks about ... and then it just kicks in and I sort of rehearse it. ... a lot of the stuff I ... started to talk about to the workers. I mean I'd be able to converse with them in a way which was meaningful but also productive. So I suppose the rehearsal is something that I do to reinforce what I'm learning. ...because it's fresh in my mind I like talking about it ... I like to discuss it... (Luke, 92/25/B, his emphases).

Similarly, in the extract below Harriet sees memorising as an aid to understanding:

...I need to reflect back on things and for that I need to remember and recall my memory of what's happened and I think that's important because if I didn't have that ... I wouldn't be able to have a situation to reflect back on or I
wouldn't be able to say ... this is what I learned and then I wouldn't be able to understand. ... So I see it as pretty important (Harriet, 92/124 - 128/A).

Harriet's focus is to understand. Her use of reflection resembles Luke's use of rehearsal—it allows what is learned to be revisited and processed and understood. In this experience both remembering and memory are associated with understanding. Knowledge is remembered in order to explore it, evaluate it and/or reflect on it and reach understanding. In order to remember, the material must be or have been committed to memory in some way. Harriet clarified: "I understand at the time, not all of the time but the reflection ... just sort of clarifies things at the end and ... I've got a clearer understanding of what's happened" (Harriet, 92/124 - 128/A)

In Learning As Looking At Something In A Different Way, learners conceptualise remembering in terms of aural, kinaesthetic and visual activities. One such strategy is the metaphoric mind's eye. For example, Elizabeth seeks meaning by visualisation strategies—the development of a picture of the knowledge: "I find one thing and then another and then I go look for ... what that refers to and then look for something else and build it together until it makes one picture. ...If I can see it in my mind's eye ... a mental picture of it then I can relate it to other things." (93/81-85/A). Learning for Elizabeth is "...opening doors..." She provides an illustration of this and the exponential nature of understanding. She discusses learning about early intervention for rehabilitation to work:

...when I ... read the first article it seemed like one article, right? But the more I find out about it, I can put a picture to the reasons why people stay at home, what happens to them when they stay at home ... [and then] it means something different to when I first saw it because I have other ideas ... every little bit of information changes... (Elizabeth, 93/87-88/A).

In the passage below Harriet uses various strategies to memorise the material she learns: listening; writing things out in her own words; backing up the material with other literature; relating it back to experience. These are not rote memorising strategies but skilled use of the forms of rehearsal that began to be evident in the experiences described in the previous chapter.

...I remember things just by experiences that have happened. ...by writing things down and that becomes encoded. ...for example, factual things that I may learn in lectures I learn best if I actually listen to the lecture, write the notes down, go back home then rewrite things out fully, try and get other information, other literature to help back that up. Once I write things out a few times and maybe put it into my own words I learn... (Harriet, 92/120/A)
Harriet explained how the process worked for her:

...once I see things written I relate it back to the experience in the lecture room or whatever and I can identify with what I've heard or what I've remembered in there. ...that's the same outside of uni as well ... maybe at the time I just become very aware of things and ... I don't know, maybe I think I need it for later on or something, but I just seem to pick up on details and then relate it back to experience (Harriet, 92/123/A)

The Nature of Meaning and Knowledge

Like previous experiences, in *Learning As Looking At Something In A Different Way* learners understand meaning and knowledge in ways that are aligned with the experience. Meaning tends to be intangible. It is as if meaning and understanding have merged and so it has a less significant role than that associated with the experiences of the previous chapter. Nevertheless two forms are evident in the data, both of which resemble that in *Learning as Understanding the Whole*. In the first, meaning assumes an affective, experiential quality that is congruent with the learner's focus on awareness.

...I can't tell you what meaning is. All I know is that it's a gut feeling and that the brain sort of does a little bit of a tingle and ... it's like there's ... a rush of adrenalin when you understand something and then ... it's like the neural networks. Everything branches off into everything else. ... everything's touching everything else and it's all inter-related. ... meaning is being able to latch on to something else and where ... previously the subject that you're looking at has just been, oh right this is just words on paper, it suddenly turns into meaning as in, that touches that, and that touches that and all around you and it branches out in all these other areas that you can link up (Diana, 92/67/A).

The second form of meaning tends to be synonymous with personal relevance, significance or purpose. For Joanna, "meaning is something I suppose like relevance. If you consider it's relevant to what you're doing, ... if it's relevant to an intrinsic interest or something that you're specifically doing" (Joanna, 92/77/A).

The characteristics of meaning and its relation to knowledge are summarised in Table 8.2.

Knowledge has multiple meanings: "...to me knowledge can mean a number of things. It could be knowledge about a certain experience or event or something, or it could mean knowledge of ... a theory or something. ... It's not necessarily just what you read in a textbook. ... it's not an acquired thing ... that you get just from education or something. It incorporates everything that goes [on] in your life" (Megan, 93/82; 81/A). Students tend to characterise knowledge in terms of an
accessible resource. Knowledge is: "...like the total ... of what you've learnt... It's the practical and the functional information that you have, that you've acquired and that you're able to ... express or convey and you can either build on it or adapt it or whatever..." (Carl, 93/93/A). "Knowledge is a collective body of understanding... knowledge is, is the residues of all those understandings ..." (Luke, 92/31/B). Luke extends his notion of residue:

...knowledge is that broad, broad thing ... I think a lot of people ... confuse knowledge with information. I mean if you watch Sale of the Century .... those people seem to be very knowledgeable because they can spit out bits and pieces of information. I think knowledge is broader than that. I think knowledge is ... the way you relate those things, ... those understandings if you like, or what you've learnt. ... when we talk about experience ... the whole body of your experience, the whole residue, ... all the memories that you have about your experiences ... I'd call that your knowledge" (Luke, 92/31/B).

The Relation Between the Act and Object of Learning

The Learning as Looking at Something in a Different Way the act and object of learning comprise an integral whole. Learners learn and apply what they learn with intention and indicate how the object of learning is looked at in a different way. Luke provides an example using statistics: "...some of the statistics stuff is fairly bread and butter ... [but it's] applicable to what I do" (92/9/B). At the time of the interview he was writing submissions to funding bodies and he queried the Government's use of statistical information in the decision making about his area of work:

...I believe there's some doubt of the statistical relevance of the information that they're using. ...they're ... hitting projects over the head with this information, and I think that doing statistics is helping to equip me to pursue [these] arguments. ...generally the people who run the statistical divisions like the evaluation branches understand what ... statistics do and [their] limitations... When it gets out to the broader department they then see these numbers as golden which creates real, serious problems. The significance [of this learning] was simply an understanding that, ... and this is what higher ed gives me generally, a lot of things are treated very preciously. ...if you look at them in the right direction they can be quite fragile. [Yet] these numbers are used and they're treated as if they're incredibly robust. ...they[re] actually [seen to] represent the real world ... it's given me the ability to look through that ... bureaucratic ...reaction to statistics... (Luke, 92/9 - 10/B, his emphases).

Megan provided another example from a counselling course:
Learning as Change and Development

...I learned that I wasn’t as aware of my surroundings as I’d like to think I am. I always thought of myself being quite observant and not missing much. But ... in one of our courses when we had to reflect back on certain dynamics ... we were told to write down in the diary any experiences and events that were critical turning points. And I wasn’t observing any ... like that, to that depth. I was just going with the flow... So to reflect back and think about what actually happened, it occurred to me that I wasn’t ... aware of what [was] actually going on. ...so I’ve decided to make that just one of my goals for the next semester is to become more aware. ...it’s important in our ... profession. ...to be aware of what’s going on around you because how can you help or facilitate somebody else when you’re not aware of what’s going on yourself? (Megan, 93/15 - 18/A).

In each of these examples learners have made the object of learning something associated with their personal skills. Diana provided a different view of her experience. In 1993, she thought that the program had "...had a pretty significant effect..." on her:

...it’s challenged me along the way. It’s challenged my personal thoughts. It’s challenged me who I am, almost. ... I think that’s why along the way I’ve been distressed because my whole way of looking at life was just ... challenged. ...I’ve looked at what they’ve said and ... I haven’t taken it on board like I would have previously. I haven’t taken it on board and said, well this is right. I’ve learnt ... to look around ... not to take what somebody says to me as being the honest to god truth. [The program] teaches you to critically evaluate things ... not just to assimilate it as being ... the be all and end all ... I just don’t do that anymore. ... I’m aware of it and I think because I’m aware of it I can challenge it myself (Diana, 93/102-104/A).

The object of learning is now an inherent aspect of the self. This characteristic may herald the experience of Learning as Personal Change and Development.

Transformative Experiences of Learning—Learning as Change and Development

This second transformational experience, Learning as Change and Development appears to be an extension of the first. The act and object of Learning as Change and Development are summarised in Figure 8.3.

Many of the features of Learning as Looking at Something in a Different Way have become more pronounced or subtly changed in this experience. For example, looking at something in a different way has become seeing something differently. The notion of open mind that was emphasised previously is not mentioned by these learners but the way in which they describe Learning as Change and Development suggests that the experience continues to rely upon it. The more general focus on reflective and critically evaluative skills that was evident previously now tends to be
assumed and accepted as a part of learning. Moreover, skill is now related to
decision making and confidence and learning is understood as a skilled activity that
requires self-awareness and esteem. There is a strong focus on personal agency and
it is the learner's growing sense of self that dominates. It is personal change that is
emphasised. The experience is illustrated in Case 8.2.

![Learning as Change and Development Diagram]

Figure 8.3: Summary of the Act and Object of *Learning as Change and Development*

Case 8.2 illustrates the skilled complexity of *Learning as Change and Development*. Learning is a transformative experience. It is a dynamic, challenging, often exciting and continuously changing experiential process in which the learner is also changing. Learners are emotionally involved in the learning process and they think of their study as an enjoyable activity. For example, "it's been enjoyable. I don't think anything could have replaced my coming to university as an experience" (Elizabeth, 91/43/A). Experience is emphasised. Students relate learning to living and being: "...it's just being alive..." (Penny, 93/34/A). Learning is understood to be self-directed, an integral aspect of these learners' lives and their further development.

Case 8.2 shows how the use of ongoing and active critical reflection, evaluation and judgement is intrinsic to all aspects of the learning process.
**Case 8.2: Learning as Change and Development**

I think learning is a process of change. I've changed the way I see things, the way I do things. My attitude at work has changed. Learning involves life experience. It's being alive, it's growing. Every day you're learning because every day, you experience something new or you go through something different from before. You become more aware of the things around you. Every day your life changes and because it's different you see a new perspective, or you see something in a new light that you've never seen before and you adapt. You change, or something changes. It's ongoing - it never stops happening.

It can be a little like understanding how to do factor analysis. If it's a really big thing, it's like enlightenment, you change and that change affects how you see what you thought before and what you do in the future. I think once that kind of change happens you can't go back to where you were before. For example, for Community Psychology we went to the Foundation. Before we went we all had our own ideas and we'd made judgements about the disease and what the Foundation did. While we were there it sort of clicked that this was a totally different experience to the one we had imagined. It made us take a different perspective and we decided that we had to do something about it.

Usually, I think it's a slow process. It happens very gradually. I suppose first, you must acknowledge that things have changed or are different. It's like you have to examine the beliefs you had before and make a choice. Like there are lots of different perspectives and something that's right in this context may be completely wrong in another so you're sifting through different views and accepting some and not accepting others. You've got to ask yourself, is what I think now more valid or plausible. Can I justify it?

<table>
<thead>
<tr>
<th>Note:</th>
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<tbody>
<tr>
<td>1. Awareness of the value of learning.</td>
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<tr>
<td>2. The confidence of the learner.</td>
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<tr>
<td>3. Critical stance.</td>
</tr>
<tr>
<td>4. Learning is a process of change.</td>
</tr>
<tr>
<td>5. Learning is integral to life - a dynamic, changing experience.</td>
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<tr>
<td>6. The process: experiencing something, seeing it differently, adapting, and changing, being more aware.</td>
</tr>
<tr>
<td>7. Nature of transformation: size of change depends on the nature of the experience; change is progressive; cannot un-understand.</td>
</tr>
<tr>
<td>8. Learning associated with of personal responsibility.</td>
</tr>
<tr>
<td>9. Learning is gradual change.</td>
</tr>
<tr>
<td>10. Constant comparison - this differs from this: change requires the evaluation of existing beliefs and decision making.</td>
</tr>
</tbody>
</table>
Understanding is being fully aware of something. You can see it, you know what it is, you've grasped it, and
you're comfortable about it. You can talk about it with conviction and you have confidence in it. It has a
certain sense of validity and you don't have any doubts about using it. 11

I think learning is a process you go through to get to understanding. You have a basic understanding and you
build on that, change it and get further understanding. 12 If you understand it, you can change it and apply it. 13
For example, if you know the mechanisms behind it you can take it out of its context and change it without
ruining the basic idea. When you learn, you can perform different things on it and see how it can be used in
other ways. 14 Like with stats, you can get results and you can understand then but then you ask yourself, if
I'd had more subjects would that have made a difference? Or, what other factors should I take into account?
Regurgitation, it's something I'd rather not do. When I learn something I think about it a lot, maybe practice
it, look at the mistakes I make, visualise things. I compare things with what happened before and reflect on it.
I mean if you understand it you're likely to change it in some way and so you don't need to learn it word for
word. 15

Knowledge is an accumulation of experience. It's what you know. 16 It's something you have, a resource that
you draw on. It's necessary for living. 17 It's a form of personal awareness, it comes from everything that has
happened to you. You work out the meaning that you allocate it. 18 For instance if you see someone
behaving strangely, how you perceive that depends on the meaning you make of it, and you allocate a meaning
to it depending on what you know. 18

<table>
<thead>
<tr>
<th>General observations on case:</th>
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<tbody>
<tr>
<td>• The focus on change: &quot;...learning is a process of change. I've changed the way I see things;&quot; &quot;you build on that, change it;&quot; &quot;you're likely to change it in some way.&quot;</td>
</tr>
<tr>
<td>• Experience is emphasised: &quot;Learning involves life experience;&quot; &quot;You experience something;&quot; &quot;you go through [it];&quot; &quot;Knowledge is an accumulation of experience;&quot; and, &quot;you allocate a meaning to it depending on what you know&quot;</td>
</tr>
<tr>
<td>• Learners are aware of themselves and their processes: &quot;I've gained more confidence in how I think;&quot; &quot;I've become more sceptical and less accepting&quot;</td>
</tr>
<tr>
<td>• Critical evaluation is implied: &quot;because it's different you see a new perspective;&quot; &quot;this was a totally different experience to the one we had imagined;&quot; &quot;you have to examine the beliefs you had before and make a choice;&quot; and &quot;I compare things with what happened before and reflect on it.&quot;</td>
</tr>
</tbody>
</table>

11. The nature of understanding.
12. Circularity of structure - you learn to understand to learn.
13. Apply and use it, focus centrally on meaning - the basic idea.
14. Learning is manipulative - you perform different things on it.
15. The nature of 'memorising.'
16. 'What you know' changes and so knowledge is transformative.
17. Knowledge is a resource for living.
18. The learner makes and interprets meaning but it can change because it's based on what you know.
Moreover, these learners show increasing and explicit self-awareness of their processes of learning. They understand learning in terms of increasing confidence, self-esteem and competence. They express pleasure and sometimes surprise about their developing capability. Learning is concerned with transforming knowledge in order to apply it: a relative notion that differs from earlier experiences of applying where the learner was more concerned with the context of application. To understand is to know and learners talk of confidence in their knowing. Understanding and learning are integrally related as an experiential, spiralling, exponential whole: understanding—learning—understanding which is an unending process.

The Referent of the Act of Learning—Change and Development

Like Learning as Looking at Something in a Different Way, the focus of this act of learning tends to change. Students emphasise a number of different aspects of their experience, such as becoming aware, self-awareness, adaptation and adjustment, confidence and the on-goingness of learning. However, the theme that permeates Learning as Change and Development is change and growth: changing as a person; adapting/adjusting to change; development and growth; and, effecting change. This evident in the summary of the referential aspects and structural relations of the experience that are summarised in Table 8.3.

Change and Adaptation

Learning is: "...a process of change. ... a change in behaviour" (Anna, 93/28; 30/A); "...a change in behaviour, or attitudes, or level of knowledge, or skills, um through experience ... you change in some way or another..." (Lotta, 93/18; 191B); "...the mere fact that you know something that you didn't know is a change ... it's a change in your knowledge, it's a change in, can be a change in your behaviour, ... a change in your skill levels..." (Jack, 92/26-27/A); "...a change in thought ... you're gaining new thoughts and that changes your perception or how you feel or how you experience something. And ... that in turn then changes and leads to ... some new behaviour or new responses" (Harriet, 93/29/A). Inherent in this experience of learning is the idea that knowing something new changes the learner as a person.

In the passage above, Harriet shows how she understands learning to be concerned with both personal change and the way in which she manages or adapts to change. Penny provides another example: as a result of understanding "...you
adapt..." (93/71/A). This phenomenon is discussed further in a description of the structural aspect of this act of learning.

**Table 8.3: The Referential Aspects and Structural Relations of Learning Change and Development**

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Through experiencing something new or differently you change the way you behave, think or feel about something.</td>
<td>You become aware and see something differently, each new experience leads to change that leads to a new experience.</td>
</tr>
<tr>
<td>Memorising</td>
<td>A tool for learning and the development of understanding.</td>
<td>Through understanding and various rehearsal strategies.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Necessary for reflection on evaluative outcomes.</td>
<td>By visualising, reflecting, and evaluating you remember.</td>
</tr>
<tr>
<td>Understanding</td>
<td>To grasp the central meaning of something, to know, and have confidence in what you know and be able to apply it.</td>
<td>Something is perceived differently - put in a new light.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Through learning what is understood is applied. Understanding requires learning.</td>
<td>Dynamic - understanding leads to learning leads to understanding.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Is the way you perceived the world</td>
<td>Evaluating different sources of evidence and allocating meaning.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge and person form an integral relation—it is the personal accumulation of experience so it can change.</td>
<td>Changeable and transformational - by looking at it differently it changes.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Dynamic and changeable.</td>
<td>Coherent, whole but can be transformed from one understanding to another.</td>
</tr>
</tbody>
</table>

**Growth and Development**

These characterisations of change suggest growth and development though for most students this aspect of the experience was more often implied through example or description. For instance, learning is "...a process which is ... always happening. You could learn something today and you think ... this changes my life totally. And you could learn something new tomorrow and it could still change your life..." (Simon, 93/34/A). Elizabeth and Joanna were more explicit. For Elizabeth higher education is concerned with: "...growing ... this course has made me grow ... I've noticed that it has changed the way I do things in other parts of my life ... it's changed how I think about other things as well" (Elizabeth, 91/68; 41; 31/A), and "...when you grow you change" (91/79/A). For Joanna, higher education "...has changed me and I know it will change me for the rest of my life. It's not only the knowledge from the academic sense of the environment but also the personal development that you gain from the experiences along the way..." (93/4/A).
Emerging Sense of Self

In their descriptions of this experience students also focused particularly on their developing sense of themselves as persons. The data show evidence of growing personal agency, independence, and autonomy. Anna comments: "...basically you're your own person, it's up to you to gain as much as you want out of the course..." (93/1/A). She provides further illumination of these more personal attributes in the passage below:

...I've been brought up that being independent female, career oriented is like the ultimate thing really important in your life. But ... I've learnt that it's not just career and academic ... and setting really high standards of work but family's really important, friends are really important and other people in this world are really important. And I've prioritised them ahead of you know a really good quality career. I mean at the same time I'm not going to sort of suddenly just throw out a career or anything like that. But I've really learnt the importance and the value, like the value people have on myself and what they can contribute to my own life, and what I can contribute to their life. And I've found that that's really important and I never saw that before (Anna, 93/18/A).

In this passage Anna illustrates her emerging sense of self. The quotation provides an illumination of the idea 'through learning I change' that permeates this experience. Case 8.2 provides further illustration.

Confidence and the Nature of Belief

Learners also focused on the importance of confidence in themselves and the beliefs that they were developing. For example:

...even though I'm not totally sure where I stand on some views or what my beliefs are in different issues ... I have more confidence in myself to know that I can achieve or believe and hold on to that ... while at the same time be able to be pretty open about it, you know be willing to change it ... not be really rigid..." (Anna, 93/15/A).

In this extract, Anna demonstrates her growing self-awareness. For her, belief is a relative notion that can change. Lotta also talks of the change she perceives in herself and how increasing confidence in her capacity to think enables her to evaluate others' views:

...in first year ... you just soak in whatever anybody tells you. The lecturer's always right, the text books are always right but as you go through it ... you seem to gain more confidence in how you think and challenge other people's point of view when they don't coincide with your own (Lotta, 93/2-3/B).
The passages above demonstrate these learners' awareness of and confidence in their growing competence. Throughout these data the use of reflective and critical evaluative skills is implied in what these learners say and how they think. Nevertheless, the explicit focus on skill that was a feature of previous experiences is less evident here. For example, Cassie associates her ability to analyse with getting more from an experience but her focus is on the quality of the experience rather than the skill:

..I think because I analyse things and because of the way I understand things differently now to how I did before then it's better than it was ... because I get more out of situations. I get more out of watching a movie than my friends who don't do that..." (Cassie, 93/126/B, her emphases).

Likewise, Elizabeth comments: "now I get a lot more out of it, ... I get a lot more meaning out of it..." (91/72/A). However, learners' notion of change depends upon their awareness of how their current experience differs from previous experience. This process implies the use of evaluative strategies. Indeed, the examples that learners provide and the structural aspects of the act of learning could not exist unless high level skills were an intrinsic aspect of the experience. Higher education is: "...learning to think critically, learning to think in different ways" (Lotta, 93/2/B). Anna said: "I've learnt ... how to learn" (93/13/A). She links learning how to learn with her growing knowledge of her self: "...a really important thing is I've learnt self-awareness of my own self. And through learning a sense of self-awareness ... it's enabled me to learn..." (Anna, 93/14/A). Learning, self awareness and confidence in one's self and what one knows are integrally related in this experience. These aspects are explored further in the discussion of the structural aspects of this experience.

Learning as a Life Long Experience

In an earlier passage (p. 293), Simon refers explicitly to learning as an on-going process, a characteristic that has gradually become more evident in descriptions of previous experiences. In Learning as Change and Development this characteristic is an inherent aspect of the experience. These learners show commitment to learning as a lifelong experience: "...it's happening all the time ... people are continuously changing their views and their behaviour according to the things that happen around them. ...you're continuously learning things" (Cassie, 93/41; 44/B); "I don't think you ever stop learning ... I think that you start as soon as you're born ... and it just carries on..." (Lotta, 93/22/B).
The Structural Aspects of *Learning as Change and Development*—A Summary

In *Learning as Change and Development* learners understand that through becoming aware of, or experiencing something new or differently they change or something changes. They adjust to the new situation, and incorporate the new learning into what they already know and they change in some way. *New* refers to new knowledge and/or skills, or looking at something that was known previously in a different way. Each new experience leads to a change which leads to a new experience. The learning situation is boundless—it happens everywhere. The structural relations of *Learning as Change and Development* are summarised in Figure 8.4.

![Diagram](image)

Figure 8.4 Summary of the Structural Relations of *Learning as Change and Development*

**Change and Development—The Nature of a Transformational Experience**

Figure 8.4 shows how in *Learning as Change and Development*, the structural circularity that was a feature of previous experiences has become multi-layered, and more complex and diffuse. *Becoming aware* comprised part of *Learning as Looking at Something in a Different Way*. In that experience, it was associated with the idea of a continuously active, open mind. In *Learning as Change and Development* this meaning of becoming aware is not evident in the data. Rather, becoming aware has become an aspect of skill that pervades the whole experience.
It is becoming aware, and the idea that you experience to learn, that learners emphasise in the structural aspects of this experience. Learning "...is a process of change. It involves becoming more aware of things around [you]. It involves life experience because you learn from life experience. You learn from your mistakes or you learn from your successes" (Anna, 93/28/A); and, learning "...is really the acquiring of knowledge and I suppose adjusting to change" (Joanna, 93/30/A).

These learners understand that they learn from and adjust to different experiences, and as a result, they change. Joanna explains: "...every day your life changes even though it's subtle and you don't always realise it, every day you're learning something new. So that by adjusting to that change you're learning by your experiences" (Joanna, 93/31/A). For Joanna, "adjust" means to "...incorporate it into your lifestyle" (93/32/A). She illustrated her comment by referring to her return to her flat after the semester break and the need to adjust to new flatmates and new courses: "...for me that's a change that I have to adjust to because it's different to my [previous] existence. ...I have to learn how to incorporate that into my lifestyle and in doing so I'm adjusting to the changes" (Joanna, 93/32/A). She was asked how she thought the adjustment occurred: "...well first of all you have to acknowledge that there is a change or that things are different ... [a]nd ... by accepting the experience and I suppose working through it, you're learning from it" (Joanna, 93/33/A). There is internal coherence in this experience. If it is the experience of something different that allows learning to occur, and as nothing is ever the same, and because one is continuously being exposed to new things, the process of learning is continuous and it can happen in any context.

In this view of learning, learners' understanding of becoming aware and experience means seeing something differently: "...you see a difference, or you see a new perspective, ...yeah you see something in a different light or you see something for the first time as you've never seen it before" (Harriet, 93/31/A); "...because you experience it you're going through ... something different from what you've ever done before ... and because it's different, it registers in your mind and ... depending on ... how different it is and how relevant it is to you, it will stay in your mind and then ... you change in some way or another I think" (Lotta, 93/19/B, her emphases). Students not only emphasise the newness or difference of each experience but they also focus on how new and how different. This aspect of the experience is discussed further in the next section. In the passage above, Lotta also illustrates how this experience differs from Learning as Looking at Something.
**in a Different Way.** The learner "goes through," and "experiences" something differently. This is a subtle but significant extension of the previous experience in which the learner talked of "having empathy for" or "putting themselves in" a different perspective.

**The Magnitude of the Change**

Change is understood in a relative way—the magnitude of the change is seen to be directly related to the significance of the learning. Learning is "...becoming aware, becoming aware of something that you weren't aware of before. ...if it's a really big thing you're learning you can call it enlightenment... But ...it might be just something small ... just becoming aware" (Penny, 92/31-32/A). For Penny, enlightenment is "...becoming aware of something ... that really changes your outlook or your opinions ... if you do learn something that's really important it's, you can tell that it's important because you do change, it changes some part of you..." (Penny, 92/33-34/A, her emphases). Penny expanded this idea. A change to: "...some minor aspect, like when I finally work out what factor analysis is... will change the way that I approach my statistics assignments ...that's not earth shattering or anything but it would be very useful" (Penny, 92/35/A). She also provides an example of change in her behaviour: "...learning interpersonal skills has changed the way that I relate to people outside in my normal day to day life" (92/37/A). Lotta provided another example of change: "...it's dependent upon what the knowledge is, ... or what ... your experience is, ...if you go through some trauma or hardship you're going to learn different ways of survival and that will affect how you live from then on, and it will affect your behaviour and your attitudes ... I think it's not a conscious change ... and it's ... subtle so that it doesn't seem like a change ... it's just a progression maybe" (Lotta, 93/20/B).

"You Cannot Un-understand"

Students tend to understand this kind of change as a progression because once something is understood in a different way they cannot revert to their previous understanding. Cassie explains:

I didn't think about much until I started learning about [concepts of learning] at uni. So yes it has changed my thoughts. I have been trained. Psychology, because of the nature of the work that we do ... and the nature of learning about learning you change your perceptions of what it is. And you can't get out of that any more because once you've learnt that this is the way you behave and this is the way you learnt, ... you can't go back to just whatever it was that you thought before (Cassie, 93/113/B).
Lotta provides another example: "What you learn affects how you see what you did prior to that and it affects how you'll act in the future" (Lotta, 93/23/B). Structurally, this experience resembles the relational notion which was evident in Learning as Relating: Understanding Where, and Learning as Understanding, i.e., making relations with previous knowledge and applying it to future situations. In Learning as Change and Development, this structure should now be understood in the context of transformation rather than the accumulation of knowledge. The notions that "you can't go back" and "[it] affects how you see [it]" suggest that what you learn changes what you understood in the past and how you will act in the future.

This transformational experience of learning is understood as "...a slow process... It's not like all of a sudden OK I'm doing psychology so we have to see things differently" (Cassie, 93/114/B). Cassie explained:

It's the sort of training that we have, the way we learn things, you do see things differently and it's only when you go back to remembering what you thought about things in high school or something like that, that you realise that your perception has changed (Cassie, 93/114/B, her emphasis).

Reflective Judgement

Earlier in this chapter reference was made to the skilled nature of Learning as Change and Development. Unlike previous experiences, however, learners tend not to refer as much to the skill aspects of learning. Yet, the structural aspects of these learners' experiences depend upon their use of critical reflection and evaluation and these processes are intrinsic yet somehow superordinate7 to the act of learning (see Figure 8.4). This is illustrated in Lotta's statement (see Lotta, 93/23/B, above) and in other parts of the data. What is evident is a form of reflective thinking that might be called reflective judgement. Lotta extended the idea she raised above:

..if you find something that disagrees with your beliefs then whatever you believed in the past, you're going to have to look back on [it] and make a choice as to whether you believe what you've just learned or whether you stick with what you learned prior to that. ..if you decide that what you've just learned is more plausible and/or justified, then you're going to have to do something about what you learnt prior because it disagrees with what you think of now... (Lotta, 93/23/B).

Joanna provides a similar example:

7 I use superordinate here to imply the way in which learners use of skill pervades and affects each aspect of their experience. I do not wish to imply some kind of transcendental 'ego' or being that orders experience like that of some early perspectives of phenomenology.
Learning as Change and Development

...well first of all you have to acknowledge that there is a change or that things are different and ... you have to really make a decision of what you're going to do about it. You have to decide ... is it something that I want or is it something that I don't want. If it's something that I don't want, well I'll just do something different to avoid it or else I will say well OK here's something different, what can I do about it to incorporate it into what I want to do? And so therefore by accepting the experience and I suppose working through it, you're learning from it. And it's something that you can call on in the future if you are faced with that experience again. So therefore your learning has been of benefit to you in the future (Joanna, 93/33/A).

In the passages above Lotta and Joanna talk about beliefs or knowing in a way that implies commitment. If they see something differently they must make a decision about the validity of the new knowledge and how it relates to what they knew or believed previously because what is newly learned exists in a different relation to them. For Lotta the new knowledge must be more plausible than the previous knowledge and she must be able to justify her changed belief to herself. Similarly, Joanna makes reference to the need to acknowledge that her experience differs from previous experiences. Recognition and acknowledgment of difference are outcomes of evaluative strategies.8 This experience differs from that described as critical reflection and evaluation in Looking at Something in a Different Way. The learner now focuses on the change in belief rather than the use of skill.

Understanding—The Confidence of Knowing

In Learning as Change and Development understanding is concerned with knowing. Understanding is: "...if I understand something it means that I grasp the central meaning of it, that I grasp the parameters of it, and that if I were to explain that to another person I would be fully aware of what I was talking about" (Joanna, 93/48 - 49/A); "...in the extreme it's enlightenment" (Penny, 93/68/A); "...fully knowing what that learning is and what the complete essence of what that learning involves..." (Simon, 93/65/A); "...to understand something you have to know what it is that it's about. You have to know why, what its uses are..." (Cassie, 93/71/B). Similarly, students refer to the comfort of knowing: "...it's comfort ... that you're comfortable ... about a subject ... I don't mean [that] you know every little thing about it but you're comfortable that you haven't missed anything..." (Jack, 92/55-56/A).

8 Mention was made of recognition and acknowledgment in Learning as Looking at Something in a Different Way. In Learning as Personal Change and Development it has become a more significant feature.
An essential feature of understanding or "fully knowing" is having confidence in what one knows: "...if you're asked to talk about it or write about it, that you could do that with confidence" (Simon, 93/65/A); "...I think understanding ... to some extent, incorporates confidence, that you have confidence, because if I didn't understand something I wouldn't be able to sit there with conviction and tell that person" (Joanna, 93/48-49/A). These passages suggest a concern with the veracity of understanding: an interpretation supported by Anna's comment: "...it has to have a certain sense of validity" (Anna, 93/67/A). Similarly, Cassie refers to lack of doubt—a concept akin to Simon and Joanna's notion of confidence. Cassie tutored high school students. When she was asked to provide an example of understanding something, she described her successful use of behavioural modification techniques with one of her more difficult students who was being disruptive in class. For her, understanding is: "...being aware ... of what you've learnt as being a changed behaviour or aware that something is clear... Clear in that you don't have any doubts about oh maybe I'll have a problem with ... that ... you fully know what it is that it's about, you know how to apply it, ... you just know what it is... It's like you don't have any doubts about performing the task..." (Cassie, 93/67-70B).

The data suggest that confidence is an important attribute in the change process. In earlier, non-transformational experiences, the knowledge that learners acquired or understood was not something that they experienced as self-generated. They tended to understand learning as absorbing, applying, or relating to knowledge from other sources. Here the situation differs. Learners reflect upon available knowledge, transform it and make it their own. It is as if the transformative act requires confidence in the self.

The Relation Between Learning and Understanding

To some extent, the relation between learning and understanding resembles that of the previous experience, Learning As Looking at Something In A Different Way. For example: "learning is a process you go through to ... attain the level of understanding" (Jack, 92/61/A). Learning and understanding are understood to be part of an experiential whole, in which learning is the predominant aspect and understanding is seen as an essential component: an integral part of the learning. For example: "you can have learning without understanding but you can't have understanding without learning... Understanding is part of learning. It's ...like a big circle with a little circle in the middle. [Understanding is] the little one" (Lotta, 93/35 - 36/B). Joanna commented: "...learning and understanding tend to go
Learning as Change and Development

together because obviously if you understand something you're going to learn it a lot more effectively" (93/50/A). Understanding allowed her to "...retain what you've learnt and be able to build on it" (93/52/A). Building is concerned with generating:

...further knowledge, ... if you have a basic understanding of something, for example if I learn that the world is round and I understand that, then that gives me the base to build on if I want to learn about outer space, about the planets and the sun and things like that. But if I didn't have that basic understanding that the world was round, it would be a lot harder for me to broaden my knowledge if you know what I mean (Joanna, 93/53/A).

A basic understanding can be built upon to produce more understanding. Like the previous experience, the relation appears to be spiral in nature. The relation between learning and understanding is summarised in Table 8.3.

Applying Revisited

For Joanna, "...to build on..." is to learn. Here, learning is the driving process but understanding is an essential aspect of the whole. Understanding is, "...a level lower" (Harriet, 93/66/A) than learning. To understand is to "...have a grasp of something and accept [it]..." (Harriet, 93/66/A). However, for Harriet, grasping does not mean that she has "...necessarily gained something... You may ... see it and say, OK, but you may not think I can use this or apply this later, or see how it can be applied in any way" (Harriet, 93/66/A). It is learning that is concerned with change: "[you can] ...see how it can be presented in other ways ... so the difference is with learning that you don't see it just as it is, but you can put it in a new light and then maybe do something with it and sort of more flexible with it" (Harriet, 93/68/A, her emphasis). What is understood is used to learn: "...to build on it" (Joanna, 93/52/A); "... once you understand something, once you know something you can use that information. ...it's ... something worthwhile you've got ... a resource you can use..." (Penny, 92/39/A, her emphasis); "...you know how to apply it..." (Cassie, 93/68/B); "...you become fully aware of it, to such an extent that you can apply it to other areas, and relate it to other concepts that assimilate the information..." (Anna, 93/54/A). Using is an integral aspect of learning. However unlike experiences of Learning as Relating in which the context of application was emphasised, here the use of knowledge is seen in terms of transformation and

Note 'accept.' This resembles Lotta's notion of belief and Joanna's 'acknowledge' that were mentioned on page 300.
learners focus centrally upon the knowledge itself. Lotta provides an illustration of this distinction when she talks about the meaning of learning and understanding:

...thinking about ... you know what the mechanisms are behind it, ... you can turn it round and apply it, you can take it out of [the] context [in which it] was given to you ... and change it ... without ruining the concept of it. ...you're able to perform different things on it because ... if you know what it actually is then you can change it and apply it... (Lotta, 93/33/B, her emphasis).

For Lotta understanding is to "...know what it actually is..." (93/33/B, her emphasis). Learning is linked to an ability to manipulate knowledge, to take it out of its context and change it:

I think learning is ... I think you build on understanding ... say for example you understand the statistical ... formula. You understand how to get the figure at the end ... I think then learning comes in ... and ... maybe by just practising or playing around with the formula or putting it into practice and seeing how it actually applies to the research or something, maybe then you can actually learn that that formula's more than a formula. It's ... not just maths. It's ... a way to find out if the procedure's valid or reliable or whatever or if it's significant (Harriet, 93/74/A).

Harriet provided an example:

...after I got my results, I thought, OK, this is what's come out of it. This is what the result says. How can I interpret that now and what could I do in the future with it? ... I just thought of other factors that might have come in. Um if I'd had more subjects then maybe I would have got a different result and then maybe that would have had implications for therapy or treatment... (Harriet, 93/76/A).

Harriet thought of this process as reflection:

...that's how I ... best learn is on reflection of things, ...writing it down and then thinking, did this work? Yes! No! Why not? How could I improve it? Um, if it worked, what use can I make of that now, and things like that. (Harriet, 93/77/A).

Her reflective processes mirror the reflective judgement that was described earlier.

**Transformational or Repetitive Learning—An Inherent Conflict?**

Learners' descriptions of memorising and remembering in *Learning as Looking at Something in a Different Way* were rich and varied. However, like the use of skill, in *Learning as Change and Development*, students make memorising and remembering less figural. They understand memorising in at least two ways: repetition or regurgitation of the knowledge as it is given for certain learning tasks
like examinations and when there is too much to learn; or, memorising which is associated with skilled practice and understanding.

Learners tend to conceptualise repetitive memorising as a privative approach to learning: "...well I think that it's an unfortunate thing that you have to do if you're at university..." (Penny, 92/57/A); "...that's where you've only got the one trace available for you" (Lotta, 93/44/B); "...I'm not very good at memorising. I don't really very often try and ... learn a set of facts or something like that. ... actually I'm not sure I should say I'm not very good at it. I'm not very interested in it" (Jack, 92/74/A); "...I see it as repeating or writing things down over and over and over again so that it becomes so familiar to you that you'll never forget it" (Harriet, 93/85/A). Jack was asked what he did about exams: "I try and keep reasonable notes through the year and just re-read them ... I usually don't try and learn new information just before an exam. ... I'd rather ... reinforce what's already ... there" (93/79/A). Harriet indicated that she was aware of the limitations of the repetitive approach: "... it doesn't work ... when there's a lot of content and it's fairly new because you just can't store too much all at once, ... especially if it's new and you've got nothing to ... relate it to" (93/85/A, her emphasis). These learners understand that this kind of memorising is appropriate only for the short term retention of information and adopt it in certain contexts or when other strategies are not available to them: "basically it's just information. I mean you could ... memorise a string of letters ... or a phone number ...that can be fine, you can remember that but it doesn't have any context or meaning to it" (Anna, 93/59/A).

Like *Learning as Looking at Something in a Different Way*, the second form of memorising is associated with understanding, skilled practice or visualisation, and is strongly related to remembering: "I usually remember things by experiences that I've had, or writing things down, ... and I get pretty strong pictures in my mind so I'm able to recall things like that pretty easily" (Harriet, 93/78/A). Harriet was asked to talk about her 'pictures': "... visual pictures ... just the place of experience and ... what I've observed and mistakes that I've made and maybe the strengths that, where I've come out better. I'll sort of look at that and say OK and compare it to something where I didn't go as well and say um why not? ...I just reflect on the past..." (Harriet, 93/79/A). In keeping with their more general awareness of skill students have a greater understanding of the processes involved: "...when it's understood it's a lot easier to remember ... you've got many different ways of looking at something, ... there's a lot more cues that you can use to bring it back..." (Lotta, 93/42/B); "...after I've learnt something I think about it a lot and think about
how I would remember it ... I guess because it all gets coded away..." (Simon, 93/71/A). Simon makes the 'coding' process work by relating what is learned to himself in some way and "...then I know it..." He explains: "...it gets coded away ... if I learn about a certain theory and think that reminds me of something that's related to an aspect in the theory ... with another person..." (Simon, 93/73/A).

Students who understand learning as change are aware of and struggle with the potential conflict of this experience of learning and the act of repetitive memorising: "...memorising something, you're not necessarily going to understand it. It's really difficult, it's very, I know what I'm trying to say but..." (Anna, 93/57/A); "...I don't know if you can just straight out memorise and still understand it, but when you're remembering it you're also more likely to change it slightly in some fashion because you understand it and you don't need to learn it word for word" (Lotta, 93/45/B). In this context, transformative experiences of learning/understanding change their relation with what is learned and so repetitive memorising becomes redundant.

The Nature of Knowledge and its Relation to Meaning

In the previous experience knowledge was understood to have multiple meanings and it was experienced as an accessible resource that was dynamic and changing. In Learning as Change and Development these characteristics, and in particular the notion of knowledge as a resource, are further developed. Like the previous experience, knowledge is, "...basically what you know, ... My knowledge is what I know" (Joanna, 93/67/A); "...knowledge is something which we have..." (Simon, 93/90/A); "...it's ... an accumulation of experience" (Penny, 92/82/A), and "...I don't think of knowledge as a really formal sort of education thing. ...it comes from everything that ever happens to you every day of your life" (Penny, 93/98/A). Here, the quality of having knowledge has a significance beyond the previous experience. Joanna sees it as: "...a form of personal awareness. It's being aware of your environment. ...because if you didn't have knowledge, well you wouldn't be able to read, or listen to the radio, or ... you wouldn't be able to ... pick up on cues that were happening around you. If you heard an alarm ... you wouldn't know that it was a fire alarm or you wouldn't know to stop at the traffic lights and that's all knowledge" (Joanna, 93/67-68/A). Joanna's description strongly resembles and may be the forerunner of the subsequent experience, Learning as a Constitutive Act. Having knowledge is now a fundamental aspect of being in the
learner's every day world. It is a requirement for the act of knowing and for further learning, and a tool for living.

This view of knowledge is related to these learners' views of understanding. Understanding is to know and knowledge is what you know. This interpretation has implications for how knowledge is experienced. In previous categories the building of knowledge is conceptualised as accumulative or additive. In *Learning as Change and Development* building is not accumulative but a change process. Knowledge is transformed from one understanding to another.

In *Learning as Change and Development*, knowledge and meaning have a strong relation: "...knowledge comprises past meanings, present meanings and all the significance surrounding meanings..." (Cassie, 93/100/B). Students allocate meaning according to their view of the world - how they perceive the world.

...socially I think that a lot of meaning that goes on is up to you, there’s no ... set rules and a lot of the time how you perceive the world is how you allocate meanings. ... if you were in a situation and there was somebody who was behaving strangely, how you perceive that behaviour is dependent upon what meaning you put to it. ...it depends on the meaning that you give to what you perceive (Lotta, 93/49 - 50/B)

However, "...meaning comes with the understanding. ...if you can work out what the meaning is behind it, that's the mechanisms, then you can ... understand it more clearly..." (Lotta, 93/47/B). Note that Lotta experienced understanding as: "...you know what the mechanisms are behind it ... you can turn it round and apply it, you can take it out of its context ... and change it ... you're able to perform different things on it because ... if you know what it actually is then you can change it and apply it..." (93/33/B). For Lotta, meaning is the outcome of her manipulation of knowledge. In this experience there is a strong sense of personal agency - it is the learner who "...work(s) out ... the meaning behind it..." (Lotta, 93/47/B) or the "mechanisms." These data suggest that it is the relation between knowledge, as an experienced object, and the learner's self determinacy that makes personal change possible. "...I think knowledge and meaning would be tied together because what I know obviously has some meaning for me, it has some value, and there is some central argument to what I know. So that my knowledge base would probably be uh heavily ... psychologically orientated obviously, and that has some meaning for me" (Joanna, 93/67 - 68/A)
The Relation Between the Act and Object of Learning

In this experience the relation between the act and object of learning is more difficult to distinguish than previously. *Learning as Change and Development* is a change of some aspect of the self and so learners relate the object of knowledge to themselves. Anna illustrated this phenomenon when she said: "I've learnt self-awareness of my own self" (93/14/A). She talked of her previous lack of self awareness: "... well as I found ... out in second year I was ... stumbling around because I didn't feel I had any real identity ... I was uncertain about how I stood as a person. Like what I saw in myself, my goals, my philosophy of my life, my purpose of life and all that kind of thing" (Anna, 93/14 - 15/A). She compared this state with her current self awareness in which she had learned of the value of herself as a person (see Anna, 93/18/A, p. 294). She provided a further illustration:

...there was a great deal in [community psychology] on empowerment which really opened my eyes up ... personal empowerment is having a sense of control over your life, ... so ... if a situation arises ... you can do something to change that ... like an internal locus of control ... you don't have to ... believe that a change only occurs through luck or chance ... or through powerful others. ...you can make an impact, you can affect your life, influence your life, and change the path you're going on. ...I think that's really important to realise that that contributes to what you're going to do in your life. And also that you can ... help other people achieve that. ...you need like ... a higher self esteem to believe that yes you can do certain action to achieve a desired outcome or whatever you want (Anna, 93/19 - 22/A, her emphasis)

Anna compared this experience with that of someone who had been born into a context which had been affected by:

...generations and generations of poverty ... they may have been abused... So their self esteem is really low, like 'I'm useless,' ... 'I'm not an intelligent person,' 'I haven't got any potential,' that kind of thing. If you've got that sort of view or perspective of yourself then there's no way you're going to believe that you can do something to change your situation (Anna, 93/23/A).

These passages and extracts of Anna's that were used previously to illustrate other features of this experience show how the act and object of learning are bound up together and relate to self-identity. This aspect of the experience is strongly related to that of *Learning as a Constitutive Act* that comprises the last transformative experiences of learning.
Learning as a Constitutive Act: Two Case Studies

The last section of this chapter is devoted to the experiences of one student and so they are presented as specific case studies. The data derive from Luke's 1991 and 1993 interviews. His experiences differed sufficiently from what has gone before that they required separate treatment. Nevertheless, they have an obvious relation to the transformative experiences that were described previously and could be interpreted as particular, but outlying instances of them. The relation between the two cases is also quite evident. Moreover, the cases provide one example of the kind of intra-individual change that occurred in students' experiences of learning in the study. The experiences are summarised in Table 8.4.

<table>
<thead>
<tr>
<th>Experience</th>
<th>Main Referent</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructing a World View</td>
<td>Creating a world view - a way of thinking, seeing and acting upon the world.</td>
<td>Constitutive: using the discipline of the mind (intellectual tools) to construct the way you see the world.</td>
</tr>
<tr>
<td>Constituting Self</td>
<td>Gaining a better understanding of the world and therefore of myself.</td>
<td>Constitutive: constructing and reconstructing reality.</td>
</tr>
</tbody>
</table>

In the first experience, Learning as Creating a World View, Luke seems to focus specifically on and extend the building aspect of Learning as Change and Development. In this experience learning is a building process, the construction of a world view—the creation of a way of seeing or acting upon the world. The second experience, Learning as Constituting Self is related to the first but is more concerned with understanding one's world and constructing reality. In this experience knowledge is understood to "frame" the self, and experience mediates what is learned. Both experiences focus essentially on gaining understanding and are concerned with Luke as an ontological being. Each carries a strong existential component in that Luke understands that he is responsible for his own construction of knowledge and experience.

Cases 8.3 and 8.4 were assembled almost verbatim from Luke's interview data. For clarity the material was sometimes re-arranged to make the focus and structure more visible. In view of this, unless I wish to make a specific point, I have used fewer direct quotations in the text.
Learning as Constructing A World View

Luke's experience of learning as Constructing a World View is illustrated by Case 8.3.

The Focus of the Act of Learning as Constructing a World View

In Case 8.3, Luke's main referent is the construction of a "...world view..." (91/57/B). A world view is understanding: and a way of thinking by which he understands, or acts upon, the world. He tends to use words like looking, seeing, thinking and understanding synonymously. For him, learning is a: "...a building process..." (91/53/B) in which: "...you construct the way you see the world on the basis of the information that you get ... and [the] information that you get may change the architecture of that construction. I think ... essentially for me that's what learning is" (91/53/B). His use of "architecture" implies structure or supporting mechanisms. His focus is on a way of thinking or how you construct something. For example, he thinks higher education is about "...creating a way of thinking,..." an "...analytical style of thought..." which he associates with "...a discipline of the mind" (91/16/B). Learning is: "... a way of looking" (91/53/B). He stated, "I think it's helpful in every day life and in everything that I do" (91/16/B), and within the interview he enacted "...this way of thinking." For example, he used the whole of the interview to construct a way in which to see or understand learning.

Luke understands an "...analytical style of thought..." as the "tools to understand" (91/56/B), "...an analytical discipline" (91/58/B). He wants to have confidence in those tools "...to apply or work on an understanding" (91/56/B). He is continually concerned with the human intellect: "...I think [it's] fascinating that ... what we have and the way we use what we have in terms of our intellect, no one has an understanding of how that actually works" (91/41/B). Intellectually means: "...bringing the power of my mind to the problem ... there's so many questions in the world and ... in trying to get answers to those questions ... applying an intellectual process and questioning process..." (91/89/B). It is a process that seeks meaning, "...meanings to puzzles." (91/89/A), and "I need those tools" (91/57/A, his emphasis). He understands and acts upon the world through the use of analytical tools: "...a way of intellectualising ... [a] way of questioning" (91/58/B)
Case 8.3: Learning as Constructing a World View

I chose to do a BA because I wanted something that was broad, that would educate me not just give me a career. I think higher education is a discipline of the mind. It's about creating a way of thinking. This is what's important to me. It's that analytical style of thought that's helpful in every day life, in every thing I do. I can look at things more critically, think more laterally about things which is something that I've found invaluable in my work because I'm asked to generate solutions to some complex problems so that sort of discipline helps. It's also given me confidence in my own opinions, that kind of presence of mind.

Studying psychology gives me an holistic view of some problems that I may have only seen the tip of. It allows me to assess all the angles, gives me a broader view of everything. In my job there's a lot of questions for which I don't have answers and this is giving me some of those answers. I'm getting a bigger picture and it's pretty exciting. I mean there's a lot of emphasis in the first year of psychology on paradigms and the different perspectives. It's a sort of menu or pallet of what's there and it's opened my eyes. There's a lot of debate, there's a lot of different ideas and different perspectives to look at the same time. It's building on what's gone before but it's also changed so markedly from where it started and it's still new and in that way it's exciting. You can see there is flexibility and there are no truths, very few facts. There's no straight way of looking at things and I can see how those perspectives can, not live harmoniously, but they can coexist and from those perspectives something useful can come. I think it's very refreshing that in academic pursuits things change, I mean the way we look at things changes - the way we look at things will open up new ways of thinking. That's exciting.

Learning is a building process, a construction if you like and the construction you have is your world view. So learning is about how you construct. You construct the way you see the world on the basis of the information that you acquire. It's a way of acquiring and then adding what you've acquired to what you've constructed and that may change the architecture of that construction.

<table>
<thead>
<tr>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 His focus on education rather than career.</td>
</tr>
<tr>
<td>2 Discipline of the mind is associated with an analytical style of thought and creating a way of thinking.</td>
</tr>
<tr>
<td>3 The idea of presence of mind - he uses this in the context of lived experience.</td>
</tr>
<tr>
<td>4 Focus on paradigmatic differences. He uses perspective and a broad view as strategies to construct the way we look at things.</td>
</tr>
<tr>
<td>5 His excitement at the flexibility and lack of 'truth.'</td>
</tr>
<tr>
<td>6 The learner directs new ways of thinking.</td>
</tr>
<tr>
<td>7 Through learning you construct your world view.</td>
</tr>
<tr>
<td>8 Nature of world view - its architecture can change.</td>
</tr>
</tbody>
</table>

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Essentially, it's a way of looking. I don't learn to pass exams. I mean I'm very good at passing exams but for me that's not enough. I search to understand and learning gives me the tools to understand. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding. I don't want knowledge or values that are edged in cement. I'm looking for an understanding that comes from questioning those traditional values. I want the tools to question them and I want to have confidence in the tools that I have, to apply to or work on that understanding.
Learning as a Constitutive Act

and being critical. For example, "...what learning has enabled me to do is to say well you know I think what you're saying is invalid..." (91/45/B). Learning gives him "...confidence in my own opinions ... it gives me presence of mind..." (91/17/B, his emphasis). He uses "presence" as lived experience of mind. The referential aspects and structural relations of this experience are summarised in Table 8.5.

Table 8.5: The Referential Aspects and Structural Relations of Learning as Constructing a World View

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>A way of thinking and looking upon the world that creates a world view by which one understands or acts on the world.</td>
<td>Using analytical tools to construct a way of thinking and understanding that changes the construction.</td>
</tr>
<tr>
<td>Memorising</td>
<td>Is the rehearsal of the construction of meaning.</td>
<td>You make connections, you see the stuff happening, and this builds the interconnections.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Connecting.</td>
<td>Making connections.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Is a world view - a way of thinking.</td>
<td>Is constructed and reconstructed.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>Learning constructs understanding which is changes by learning.</td>
<td>To learn is to understand is to learn.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Is a construct.</td>
<td>Constructed and reconstructed.</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>Knowledge is a way to view the world or an intellectual tool to manipulate understanding—perspectives and paradigms are the building blocks of understanding and meaning.</td>
<td>Can be constructed and reconstructed—by looking at it differently it changes you.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Can be constructed and reconstructed.</td>
<td>Changes according to what is understood.</td>
</tr>
</tbody>
</table>

Another facet of the idea of analytic tool is revealed in Luke's emphasis on the acquisition of a broad or whole view: "I wanted to have something that was broad, that would educate me not just give me a career" (91/22/B); "...gaining a broader view..." (91/18/B); "...an holistic view..." (91/18/B); "...a bigger picture..." (91/26/B); and "I'm still trying to stay fairly broad..." (91/52/B). It becomes evident that this notion of a broader view is itself "an analytic tool." It allows him to: "...assess all the angles..." (91/19/B) and gives him flexibility that was not available in a more "technical" and "structured" course. On a different dimension, this focus is also revealed in his excitement and interest in: "...there's so much debate..." (91/41/A); "...different perspectives..." (91/41/B); "...there's a lot of

12 Luke compared his current learning context with that of engineering. He had an engineering degree.
different ideas and different opinions to look at the same sort of subject matter." (91/39/B); "...different paradigms and different perspectives..." (91/39/B); and "...those perspectives together with different subject matter within those perspectives..." (91/39/B).

The broad focus and different perspectives appear to provide him with the scope to develop a way of thinking about something. For Luke, "...knowledge is the building blocks of understanding and meaning." (91/86/B, his emphasis). He uses it as another tool to help him construct meaning. Higher education has provided him with "...those tools that you use to question whether they're technical tools like analysis of statistics or simply paradigms or metaphors that you can use on a certain subject..." (91/58/B). They are intellectual tools or strategies through which to view the world. This experience resembles the idea of empathy for different perspectives that was evident in looking at something in a different way or seeing something differently. There students talked of placing themselves in the perspective. Here however, what is made figural is not empathy for but how the different perspectives "work" for the learner as tools to aid understanding. It is through using perspectives as intellectual tools that understanding is acquired. Moreover, Luke appears to be adept at changing tools according to purpose. His notion of skill in learning is more than critical reflection and evaluation that is applied to knowledge. Luke experiences the substances and forms of knowledge as intellectual tools. The nature of meaning and knowledge are summarised in Table 8.5.

The Structural Aspect of Learning as Constructing a World View

Case 8.3 illustrates the structure of this experience. For Luke, learning is constructing: an interactive, experiential process. What is learned or constructed is understanding. It is constructed in terms of what is already known but the "architecture" of what is known can be changed by the construction. Likewise, "...meaning ... is a construct..." (91/82/B, his emphasis) of society and so "...meanings will change..." (91/82/B) in the same way that society changes. In Case 8.3 is a description of how he makes meaning. A certain meaning becomes his construction until something happens to suggest that he should question it. However, once Luke understands something "...I then try and see how I can apply [it] ... you go back and you say well based on my understanding let's change a few of the variables, let's have a look if it works again." (91/69/B). So he is the arbiter
of the reconstruction. He explains the process by talking about how he understands psychological knowledge:

...you can see there is flexibility, ... there are no truths, I mean there are very few facts. ... for me that has an impact on my life. There's no straight way of looking at things... I mean I come across people who don't believe in what I'm doing, don't believe in the people that I'm doing [it] for and those sorts of things.13 ...they have a perspective about unemployed people... I have a different perspective about unemployed people. ...I can see that those perspectives can, I mean maybe not live harmoniously but they can coexist and from those perspectives something useful can come. They don't have to knock each other out. ...I mean I don't have to go and beat people over the head and say well you shouldn't think like that. ...if that will work for you and ... I mean, as it ceases to work it will die out, that's just the way it works. ...I think that's really refreshing to know that, even in ... academic pursuits things change, I mean the way we look at things change[s]. ...and the way we look at things will open up new ways of thinking so that's ... exciting (91/43/B).

So what is constructed is reconstructed in a continual interactive relation. Luke sees himself as part of a larger society that constructs meanings and he lives within those meanings. His is also an existential view of learning. He sees himself as an agent of construction: he is responsible for how he sees and how he acts in the world. The structural relations of Learning as Constructing a World View are shown diagrammatically in Figure 8.5.

![Diagram of Learning as Constructing a World View](image)

Figure 8.5: The Structural Aspects of Learning as Constructing a World View

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13 Luke works with unemployed people.
Learning as a Constitutive Act

Remembering as Connecting

For Luke, remembering depends upon connectivity: "The more things that are involved in the individual memory, ... the more real ... the more vivid it will be. So the more interconnections ... that you can make ... with that new bit of information the better chance you have of remembering it I think..." (91/76/B). He provides an example:

I think connections happen. ...I'm never bored driving a car any more because ... ... I mean I'll be going past something and I'll be looking at say ... the way you see things ... you know the moon on the horizon effect, ... the motion parallax ... that sort of stuff happens around you and ... I mean I was standing in a bank ... and it's got this display that ... says 'go this way' and I noticed that there's a dollar line along the bottom and a lot of letters actually look like they're bent from the bottom and they're actually not when you look at it. ... So ... there's all sorts of stuff that sparks, I mean you come across it all the time and I mean I don't know whether I seek those interconnections or I think maybe I'm just standing around looking at stuff and I see something that I've learned. ...or I make more sense about it (91/77-78/B).

In this passage Luke enacts the process of construction and reconstruction: "...the interconnections are just generally because I'm thinking about the topic... You actually see the stuff happening ... which builds on those interconnections so" (91/78/B). In his experience remembering is this kind of connecting. He sees it as a tool for constructing understanding.

Learning as Constituting Self

In this second experience of learning, the idea of mind that was evolving in the previous experience is now more visible. For Luke, the mind is a tool and knowledge is the self. This act of learning is illustrated in Case 8.4.

The Focus of the Act of Learning as Constituting Self

Case 8.4 illustrates Luke's experience of learning as a kind of existential knowing: "I want to know stuff" (93/63/B). For him, to know is to understand: he seeks understanding. For example, when he was asked what learning is, he responded typically by emphasising not knowing rather than knowing: "Basically, I think that I don't know, I'm seeking an understanding or truth if you like" (93/60/B). He used the words understanding and truth synonymously. Understanding is something that is "...integrated into your current body of knowledge..." (93/52/B),
Case 8.4: Learning as Constituting Self

I think what Arts does for you is it builds a mind - you develop this tool that you've got in your head.\(^1\) I think learning for me—I'm seeking understanding or truth if you like. I want to know what the state of my person is so learning is about gaining greater understanding of the world and therefore a greater understanding about myself.\(^2\) I don't learn things because I have an expected use for them. I learn things because I'm very curious. I want to know stuff.\(^3\) It's not a very guided process. I tend to dredge through a lot of stuff and sometimes it comes together and sometimes it doesn't but I am becoming more critical.

I think learning is gaining experience that can be used for better understanding in the future. I think you learn from everyday experience - it happens all the time.\(^4\) The intellectual process of becoming exposed to certain situations allows us to learn from those situations. We construct on the basis of what we learn but our perception is mediated by our intellect. So what we've learnt previously really colours what we perceive. If you want to use a program analogy, it's an intellectual process because of the interaction with our software - it's writing your own program and coming back and rewriting your own program - a construction of our reality. We recategorise on the basis of what we learn.\(^5\) We put things together that we've maybe not put together before. You put certain items together simply because of your experience with those items not because they're in any way categorically related.\(^6\)

It's essentially manipulative, a set of schemas that you use or are trying to use to manipulate things so that you can reach an understanding if you like.\(^7\) We're trained to learn things so that we can gain understanding. We're curious beasts and we search to try and understand. It's reconciling a fact or thing with what your state of reality is. You grapple and the act of grappling is the learning process. I think that's grounded in reality too because you'll often learn something and some time later with another piece of information you'll gain an understanding that you didn't have before. You may have been quite functional with the previous understanding but not truly understood it. So it sits there and waits.

My knee jerk reaction is to say that understanding doesn't exist. We can conceptualise the same object but I believe it means a substantially different object for me than it is for you.\(^8\) So we can have common understanding if you like in a loose sense but never really understand the nature of reality for each other. However, you can certainly understand based on your own reality. Understanding means you've got it nailed down as a concept - it doesn't jar with you. It doesn't stand out

Note:

1. The mind as a tool.
2. Truth is associated with understanding the self.
3. Learning is 'self directed.'
4. Learning and understanding are linked in an experiential cycle.
5. A sense of learning as a cyclic ever changing constructing process.
6. Luke saw two processes: a new construction of reality; and also (negatively) where despite what we perceive we continue to construct previous 'programs.'
7. Learner as manipulator of knowledge
8. An extreme view of relativism
as an exception and so it can be integrated into your current body of knowledge or you can learn to include it by changing it intellectually so that it does fit with the body of knowledge. You can manipulate it. I think you can have a limited understanding and draw appropriate conclusions based on similar ideas or things that you've come across. While a deep understanding would essentially be something that, rather than being accepted into the knowledge base, actually changes it in some fundamental way. Then you're in a position where what you understand then starts to drive the process.

My knowledge is the sum total of what I've done and what I've seen and what I've experienced. It's personal, in that you've accepted it. It's what you've reconciled as truth. It's the state of play as it currently stands for you. It's related to understanding - it's the stuff that you can use to manipulate new information and construct knowledge bases and then everything that comes in about that certain subject hits it and is either accepted into it or sits beside it.

Specifically, I think you can remember knowledge say or an understanding which may be a category which is subordinate or superordinate to the knowledge that makes it up and then the facts that make up the knowledge. But I think certain types of memory are more useful in terms of a reality based on understanding. I think if facts are absorbed into the knowledge base they're changed, modified by what's already there. There's a process of incubation and it might form part of a greater understanding. Then I think you lose memory of the individual facts as they're translated into that understanding. You no longer remember individual facts but you remember whole themes. It's that kind of understanding that's remembered constantly and it's brought into your conscious constantly.

I've thought a lot about remembering. I think to a large extent, self is knowledge and I don't know where self is if you can't express it. I mean consciousness is self and I think that remembering is related to self, so if you can't bring things into your conscious awareness I think it fundamentally changes self. I mean you get people who have had head injuries and they will go through a process where they are reborn and they want to change their name and, and they'll want to live in different ways. And with disorders like Alzheimers where (well one theory is) where you lose the ability to remember. That's a frightening concept - not being able to remember. I mean not just facts but to know that you were here last Tuesday, or that this is your mother. I think that these things, this knowledge frames you and when you lose the ability to remember those things then you lose that frame. I think it essentially changes the nature of self.
Learning as a Constitutive Act

it is "your state of reality..." (93/57/B). Truth is associated with one's own reality: "...the state of play as it currently stands. ...what you've reconciled as truth..." (93/65/B).

To learn is to gain an 'improved' state of reality. Learning is: "...gaining experience that can be used ... for better understanding in the future..." (93/31/B); "I just want to have a greater understanding" (93/93/B); "...about creating an understanding of a broad knowledge..." (93/6/B). He is concerned with gaining a better or greater understanding than he currently has and his intention is to create understanding. This orientation occurs repeatedly. His rationale: "...I want to know what the state of my person is. And for me learning is about gaining greater understanding of the world and therefore a greater understanding about myself." (93/60/B). The main referents and structural relations of the phenomena that comprise this experience are summarised in Table 8.6.

Table 8.6: The Referential Aspects and Structural Relations of Learning as Constituting Self

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Referential Aspects</th>
<th>Structural Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Seeking, understanding, creating a broad knowledge, constituting oneself as a better human being.</td>
<td>Manipulative - using the mind as a tool to gain understanding.</td>
</tr>
<tr>
<td>Memorising</td>
<td>As previously—rehearsing the construction of meaning</td>
<td>Connections constitute further connections.</td>
</tr>
<tr>
<td>Remembering</td>
<td>Existential, what one remembers defines the self, is self expression.</td>
<td>Thematic, holistic, what is remembered can be manipulated and changes because it is remembered.</td>
</tr>
<tr>
<td>Understanding</td>
<td>Subjective, one’s state of reality—is knowledge or truth.</td>
<td>Is created or reconciled - current reality but can change.</td>
</tr>
<tr>
<td>Relation of learning to understanding</td>
<td>You learn to gain a better understanding.</td>
<td>Learning reconciles one’s understandings. A deep understanding can drive the process.</td>
</tr>
<tr>
<td>Nature of meaning</td>
<td>Is a construct.</td>
<td>Using intellectual skills</td>
</tr>
<tr>
<td>Nature of knowledge</td>
<td>The sum total of what I’ve done, seen, experienced. The truth as I’ve reconciled it—it defines the self.</td>
<td>Can be constituted and reconstituted.</td>
</tr>
<tr>
<td>Structure of knowledge</td>
<td>Can be constructed as a knowledge base.</td>
<td>Changes according to the constitution.</td>
</tr>
</tbody>
</table>

Luke's conceptualisation of knowledge is consistent with this view of learning. Knowledge is: "...the sum total of what I've done and what I've seen and what I've experienced and what I've learnt" (93/66/B). He sees knowledge in terms of a "...knowledge base..." and knowledge is "...more related to understanding..." (93/65/B). In line with this view knowledge can be used: "...to manipulate
information..." (93/65/B). What is understood can be used to manipulate what is acquired to create new understanding. Knowledge is "...pure in some sense, subjectively anyway. ...I suppose it's truth, the state of play as it currently stands. It's what you've reconciled as truth anyway..." (93/65/B). However, knowledge as experience also defines the self: "...I think self is to a large extent knowledge. ...knowledge frames you..." (93/70/B, his emphasis). Case 8.4 provides an illustration of Luke's view. He refers to Alzheimers and brain damage and argues that an inability to remember or to bring something into conscious awareness "...essentially changes the nature of self..." (93/70/B). His experience of meaning and knowledge is summarised in Table 8.6.

This view of understanding, and the way in which Luke associates it with knowledge and self is also related to a particular view of mind. An Arts degree "...builds a mind." and he understands the mind "...as a tool that you've got in your head." (93/5/B). This notion of mind can be directly related to his previous focus upon intellectual/analytical style of thought. In 1991 he talked about a style of thought and learning was understood as creating a way of thinking. He referred to the use of perspectives and paradigms as the intellectual tools of learning. In 1993, he exemplifies the notion of mind as tool in practice throughout the interview. There are numerous examples in the data where he uses different perspectives or models to create his understanding as we talk. For example he was grappling with his understanding of how people learn by critiquing parallel distributor processing and instantiation models. He moved back and forth from principle to example to principle to illustrate the points he made. He showed how some aspects of each theory could not work. He used inference and stereotypes as reasoning tools. Later he referred to the ability to form well-reasoned arguments as something that he aspired to: "...it's closure or completeness. I don't know whether you ever get there but I've felt that I was deficient in [this] area and this is making me more whole in terms of being more well-rounded as a person. ...it's helping me to be a better human being..." (93/95/B). This experience is dominated by the notion of an active intellect—the mind as a tool.

**The Structural Aspects of Learning as Constituting Self**

Luke understands this experience in terms of mind: "...I think that you learn from every day experience. ...the intellectual process of becoming exposed to certain

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14 Grappling is Luke's word: "So you would grapple and the act of grappling is the learning process" (93/58/B).
situations allows you to learn from those situations" (93/33/B). Like his previous experience, the idea of construction and reconstruction continues to be in evidence: "...we construct the idea on the basis of what we learn" (93/34/B); "...learning is collecting the data that makes the program and then you carry the program around with you and ... you seek confirming information that ... your state of reality is the right one" (93/40/B). But "...in adults the acquisition can be mediated by your intellect" (93/31/B). What was known previously can change what is perceived: "...perception is mediated by what we've got in our heads. So what we've learnt really colours what we perceive" (93/35/B). And what is acquired is able to change what was previously understood: "...we can recategorise on the basis of learning." (93/44/B). So learning is a continuous constitutive process: "...it's ... the interaction with our software ... it's changing ... to use a program analogy it's writing your own program ... and coming back and rewriting your own program..." (93/37-38/B). He confirmed that he saw the "writing and rewriting" as the construction of reality. The structural aspects of this experience are summarised in Figure 8.6.

![Learning as Constituting Self](image)

**Figure 8.6: Summary of the Structural Relations of Learning as Constituting Self**

Case 8.4 illustrates the active nature of Luke's understanding of the learning process: you manipulate, you grapple. He provides another example when he talked about remembering: "I've thought a lot about remembering. I think that it's a very difficult question. ... I mean I'm still grappling with this" (Luke, 93/70/B). Case 8.4 also presents his view of understanding: "...it fits with what you currently have ... it doesn't stand out as an exception..." (93/52/B). The new knowledge is reconciled with his knowledge base and because this is on-going this act of learning has no temporal boundary: "...quite some time later with another piece of
information [they] will gain an understanding that they may not have had before" (93/58/B). What is learned can sit there and wait.

In line with the idea of learning as a self-constitutive act, the nature of understanding is extremely relative. A "shared" understanding may not exist but can only be understood by the person who constructed it. Luke reconciles15 the issue:

So yeah common understanding ... is a very difficult thing to come across because of the different beasts we are. ... we can share the same thoughts but they can mean, ... different things in our knowledge base. So, ... we can conceptualise the same object but I believe it ... is a substantially different object for me than it is for you. So we can have a common understanding if you like in a loose sense but never really understand the nature of reality for each other (93/68/B).

Case 8.4 also shows the way in which Luke sees the relation between learning and understanding. These acts allow what is being learned to be reconciled with what was previously known: "...we're trained to learn things so that we can gain understanding" (93/57/B). Luke describes also how gaining a deep understanding "...actually changes the knowledge base in some fundamental way." (93/56/B). This relation resembles those of other transformative experiences of learning. However, in Case 8.4 this relation may differ from those described previously. A deep understanding places the learner "...in a position where what you understand then starts to drive the process." (93/56/B). This relation resembles the cyclical understanding learning understanding structure of Learning as Looking at Something in a Different Way. However, here Luke understands this relation in terms of the reconciliation of knowledge: each reconciliation enables another reconciliation. The reconciliation involves structural change in the way in which Luke learns: "I think that the way in which ... I am learning things is fundamentally changed by what I'm learning..." (93/76/B).

15 In doing so he enacts the process of reconciliation that he talked about earlier.
CHAPTER 9
THE DEVELOPMENT OF EXPERIENCES OF LEARNING

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CHAPTER 9
THE DEVELOPMENT OF EXPERIENCES OF LEARNING

...every experience has something of an adventure about it. An adventure ... interrupts the customary course of events, but is positively and significantly related to the context which it interrupts. Thus an adventure lets life be felt of as a whole, in its breadth and in its strength. It ventures out into the uncertain. (Gadamer, 1989, p. 69).

Introduction

I started this thesis by adopting Gadamer's (1989) notion of experience as adventure. My intention, by analogy, was to capture and convey the energy and momentum of my journey during the research and to draw attention to the nature of experience. In this chapter I revisit my metaphorical starting place in an attempt to synthesise the main events of the journey and suggest ways in which we may "venture out into the uncertain" (p. 69) of future research. Yet, when I started to think about this chapter I felt a little lost. The nature of the adventure that is inherent in my experiences of this study is on-going. Like Gadamer's notion of the hermeneutic spiral, my understanding of learners' experiences of learning has changed irrevocably. And, like good adventures, the research itself has stimulated further questions about, and interest in, future possibilities. So how do I bring this journey to a conclusion when in fact it feels like I am just starting out? I solved my dilemma by deciding to look upon this part of the writing task as the first instalment of a continuing narrative. Thus, the chapter comprises an eclectic mosaic of some new work, discussion, synthesis, and conclusions.

In this thesis, I drew on Gadamer's (1989) philosophical hermeneutics, Gurwitsch's (1964) view of awareness, and many of the concepts of the phenomenographic perspective to argue a case for a theoretical framework and consequential practices that are more plural and inclusive of the learner's experiences of learning than those that are evident in current research on such experiences. In the elaboration of the theoretical framework in Chapter 3, I emphasised the importance of an awareness of the perspective that is adopted, and the need for a focus on the internal relations of learners' experiences. From within a hermeneutic perspective, Marton and Booth's (1997) experiential what/how structure formed an ontological framework for the phenomenal field.
In the following sections I illustrate some of the claims I make by reference to the results that were presented in Chapters 5-8. Specifically, I examine the dimensional characteristics of the phenomenal field of experiences of learning of the participants in this study. I should point out that a substantial elaboration of the dimensions of the entire phenomenal field is beyond the scope of this thesis. It belongs to the continuing narrative that I mentioned above. However, I selected the 'vertical' dimensions of learning, knowledge, understanding, and memorising as exemplars of the potential of this research. By 'vertical' dimension I mean the longitudinal variation or morphing in meaning that is evident in the data in a phenomenon, such as understanding. The four phenomena were selected because they can be discussed and compared with existing literature. I refer in passing to evidence of shifts in meaning that are able to show how change in experience occurs over time. I also select instances to illustrate how these phenomena are internally related to and thus define each other in a particular phenomenal field. I use the elaboration of these dimensional characteristics to discuss how some of the main outcomes of Chapter 5-8 contribute to existing research on the development of experiences of learning. Furthermore, the outline of the dimensions provides an evidentiary base for a discussion of the theoretical contribution that this conceptualisation of phenomenal field makes to the literature on experiences of learning in higher education.

In this chapter it was not my intention to present a further array of new results. Rather, it is designed to summarise and synthesise the findings of Chapters 5-8, illustrate the direction that this research programme is adopting, and show the potential that the approach holds for future research on experiences of learning and understanding. Yet, the synthesis that the achievement of these tasks requires makes the introduction of some new work inevitable. I start with evidence of the participants' changes in experience. Then, in what follows I inter-weave discussion of the dimensions of the phenomenal field with considerations of the theoretical position of the research. Possible directions for future research—the further venturing out into the uncertain—forms an integral part of the discussion.

**Changes in Students' Experiences of Learning Over Time**

Over the three years of their study all of the students demonstrated some change in their experiences of learning. In the following section I provide a brief overview of the changes. They are summarised for the sample in Figure 9.1, in
which the four groups of experiences—reproductive (A1-2), relational (B1-3), constructive (C1-2), and transformative (D1-4), correspond to Chapters 5 - 8 respectively. A full breakdown of the trajectory of individuals is shown in Table 9.1.

The Development of Experiences of Learning

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<th>Year 1</th>
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<td>Constructive</td>
<td>Transformative</td>
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Figure 9.1: The Distribution of Experiences of Learning By Year of Study

In Figure 9.1 we see a similar pattern of development to that of Baxter Magolda's (1992) longitudinal study (e.g., Chapter 2, 47). The gradual reduction of reproductive and relational experiences and the gradual increase of constructive and transformative experiences shows how the growth and change of students' experiences moves from more limited to more complex ways of learning and knowing. For example, Table 9.1 shows only one student experiencing learning as Reproductive in the second year of his study, and no students were included in this category in the third year of their study. In contrast, only 3
students experienced learning as transformative in the first year of their study whereas at the end of the study 14 students were included in this category.

Age and experience made little difference to the development of experiences yet it did seem to affect their starting place. For example, 15 of the 35 (40%) students in the sample were school leavers. At the start of the study, the proportion of school leavers who experienced Reproductive (A1-A2) experiences of learning and Learning as Understanding (C1-C2), resembled the proportions for the whole sample (i.e., approximately 40%). Proportionally more (slightly over 50% of the sample) school leavers experienced Learning as Relating (C1-3) at the beginning of the study but none of them experienced learning as transformative (D1-4). However by the end of the study, students who had been school leavers at the beginning of the study were "catching up" with their older counterparts. Of the 35, 6 (17%) students who started the study as school leavers, understood learning as a transformative experience. Unlike the large shifts in experience that were reported by Marton et al. (1993) the pattern of change that is illustrated in Table 9.1 is gradual and cumulative. The differences in the rate of change may be due to differences in the length of the two studies. The present study tracked students over three years in contrast to the six years of the Open University study. Table 9.1 also suggests that students whose experiences were transformative (D1-4) show more stability in their experiences than their peers. Moreover, transformative experiences such as those of Luke and Elizabeth (see Table 9.1) did not show the kind of 'forward' progression experiences that was evident in earlier experiences. For example, in 1991 and 1993 Luke experienced learning as Constituting Self (D4), and in 1992 he understood learning as Looking at Something in a Different Way (D1). Elizabeth's experiences assumed a similar pattern of change. Future research may clarify this phenomenon.
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**Key**

* School leaver at the commencement of university study
A More applied curriculum
B More traditional curriculum
Red Experience in 1991
Green Experience in 1992
Blue Experience in 1993
A Brief Look at Four 'Vertical' Dimensions

The 'vertical' (longitudinal) dimensions of learning, knowledge, understanding, and memorising were selected for discussion because they have their counterparts in existing literature and they serve as an excellent basis for comparison. I look at the dimension of learning first because I use it to discuss the theoretical framework that was adopted in the research. Following this discussion, I explore the dimension of knowledge more fully to illustrate the possibilities and further potential of this theoretical approach and the notion of explanatory ontology. The other two vertical dimensions are presented only as outlines to show the range of variation or morphing that occurs in the development of these experiences. Each of the dimensions is summarised in a Table representing the results reported in Chapters 5-8. This discussion of some of the vertical dimensional characteristics of the phenomenal field is concluded with a look at the way in which they are internally related with each other.

Before we proceed further, I wish to reiterate an important distinction. The dimensions reported in this section constitute more than a set of categories of description that characterise a phenomenographic outcome space. In contrast to most phenomenographic studies they derive from longitudinal data, and as a consequence the dimensions are constituted by subtle shifts in nuance. So unlike a typical phenomenographic outcome space, the dimensions are able to show the morphing that occurs as learners develop and change. The notion of morphing is intended to imply that the meaning of a phenomenon undergoes repeated metamorphoses along the length of the dimension, yet at the same time, the ghosts of the previous experience may be visible in its neighbour, and vice versa.

The Dimensional Characteristics of Learning—A Dilemma

Students' experiences of learning as a phenomenal field comprise the substance of Chapters 5-8. Thus the presentation of learning as a dimension within that phenomenal field presents a dilemma—is learning the phenomenon under scrutiny or is it a phenomenon in a multi-dimensional phenomenal field as I represented it in Chapter 3? The answer to this question depends on the way in which we look at the problem. In general, this research started out with a focus on students' experiences of learning as the phenomenon. Moreover, the focus on learning and the way in which I designed the research were premised on two assumptions. First, previous research (e.g., Marton Dall’Alba & Beaty, 1993;
Säljö, 1979, 1982) suggested that students experience the phenomenon of learning variously as gaining knowledge, memorising, understanding or seeing something in a different way, etc. Second, I also assumed that what learners make figural in experience provides the range of variation that is evident in the outcome spaces of various studies. My adaptation of Marton, Dall'Alba, & Tse's (1993) interview schedule for this research was based on this assumption. Thus, in the interview questions, and from a first order perspective, learning was the superordinate construct and many of the other questions tended to relate to, and revolve around, that construct. However, early in the study, my assumptions were challenged by the participants themselves. The phenomenon, learning, that I identified from a first order perspective as a focus for the research, became reconstituted by the participants as something else. Yet, on the face of it, the results reported in Chapters 5-8 support and replicate previous research. Indeed, much of the substance of the summaries of the experiences that contribute to the previous chapters match those of Säljö's (1979, 1982) and Marton, Dall'Alba & Beaty's (1993) almost word for word. So what differs?

Previous research on conceptions of learning was based on an assumption that an individual may experience variation in their experience of a phenomenon within an interview situation. It also derived from an analysis which ignored the themes typical of the individual. So the focus of analysis was variation, for example, between understanding and memorising. However, the outcomes of the more wholistic approach to analysis that I outlined in Chapters 3 and 4, made it evident that most students understand learning as a composite of certain elements such as understanding, knowledge, memorising, and remembering etc., and learning itself is merely another element of the composite. Furthermore, their experience of learning as a phenomenon—what they make figural, and the meaning they attribute to the structural inter-relation of these elements—shapes and defines the experience. This notion of meaning comprises Marton and Booth’s (1997) indirect object of the act of learning. In studies on experiences of learning it tends to be understood variously as gaining knowledge, reproducing, relating, and seeing something differently and it is this kind of characterisation that differentiates the experiences from each other. Yet in previous research on conceptions of learning the elements of the phenomenon (i.e., remembering and memorising), and the meaning and structure attributed to them have tended to be conflated (e.g., Marton et al., 1993; Säljö, 1979). The distinction between the two was made visible by the use of Marton and Booth’s (1997) what/how framework,
Chapter 9: The Development of Experiences of Learning

and the adoption of a more hermeneutic perspective that assumed the wholeness of an individual's experience.

This realisation was one of the rationales for a change from conceptualising learning as the phenomenon to a view in which it comprises one phenomenon in a multi-dimensional phenomenal field. So, in this study I have tended to use the term learning in two distinct ways: first, as an overarching concept to describe the focus of the study; and, second, to refer to a phenomenon that forms part of the phenomenal field of learning.

In my conduct of the study, I tried to maintain both foci, that is, my first order interest in learning as a composite phenomenal field, and the learners' experiences of learning as part of that phenomenal field. However, in Chapters 5-8 and the following elaboration of learning as a vertical dimension there is evidence of the tension that derives from the situation I have just described. It will be evident that the substance of that work not only reflects my own growing understanding but also the conceptual tensions that exist between the initial design of the study and its current counterpart. For instance, much of the content of Chapters 5 - 8 revolves around learning as a single phenomenon. In addition, my interpretation of the dimension of learning assumes many of the overarching characteristics of the composite rather than the single dimension. This kind of tension derives from changes in assumptions that are the inevitable outcome of the learning that takes place during a long research study. Similarly, Baxter Magolda (1992) noted the incongruity that exists between the original design of her study and her subsequent theoretical position as her understanding developed and changed over time. This kind of tension is also visible in Perry's (1970) study as he made a shift from a focus on personality theory to a perspective that focused on experience. Such tensions not only reflect the changes in thinking that have and are occurring, but they also provide a rich source for further development and change in research of this area.

The Characteristics of Learning as a Vertical Dimension of a Phenomenal Field

The main characteristics of learning as a dimension of a phenomenal field are summarised in Table 9.2. The Table shows how learners' experiences morph and develop over time from simple reproductive strategies to an active use of skill in
### Table 9.2: Morphing of the Experiences of Learning

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<td>Gaining more knowledge by absorbing facts and figures and their relations.</td>
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<td>To absorb it and/or commit words/formulae to memory in order to reproduce it by telling or explaining.</td>
<td>Repetition at level of word or formula and/or repetition of given meaning until one remembers.</td>
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<tr>
<td>Remembering how to use/do something correctly—knowing the given structure, steps or sequence.</td>
<td>Memorising the practices by purposeful repetition or practice of sequence or steps in order to remember.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Informed practical application, using knowledge for its proper purpose, taking in/working out how and why it is related/applied.</td>
<td>Finding/work out the relation or pattern, forming a theory of why things work and applying it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Understanding and/or seeking situations where knowledge can be related/applied and knowing why it is relevant.</td>
<td>Relational: relating new knowledge to previous knowledge and to new situations.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Understanding the meaning of the knowledge by making part/part relations, forming a network.</td>
<td>Relational: new knowledge is embedded in the context of what is already known to produce something new.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Understanding the bigger picture, acquiring knowledge of the whole, and its parts.</td>
<td>Seeking and constructing a whole to expand one’s world.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>To see something differently: acquiring and using intellectual skills to put oneself in a different perspective.</td>
<td>On-going use of skills—an open, objective, reflective stance to gain insight and look at something in a different way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Through experiencing something new or differently you change the way you behave, think or feel about something.</td>
<td>You become aware and see something differently, each new experience leads to change that leads to a new experience.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>A way of thinking and looking upon the world that creates a world view by which one understands or acts upon the world.</td>
<td>Using analytical tools to construct a way of thinking &amp; understanding that changes the construction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Constituting oneself as a better human being.</td>
<td>Manipulative, using the mind as a tool to gain understanding.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

**Key:** white—forms of reproductive learning; pale grey—shifts from reproductive to relational learning; medium grey—shifts from relational to constructive learning; dark grey—shifts from constructive to transformational learning.

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1 The alphanumerical labels of the columns on the right hand side of the Table refer to the categories (and the subcategories) described in Chapters 5-8 (namely, reproductive, relational, constructive and transformative).
the constitution of self. The dimension comprises shifts within and across four main groups of experiences which are summarised below.

1) Shifts from less discriminate (A1) to more discriminate (A2) reproductive experiences of learning—these experiences show a change from passive accumulation to more active reproductive strategies. This is accompanied by a shift from a focus on words and formulae, to the given meaning of the concept or topic (white cells, Table 9.2).

2) Shifts from reproductive to relational experiences of learning—these experiences show a gradual morphing from repetitive, reproductive practices to more organised and relational experiences. The given structure or sequence of Learning as Remembering How (B1) becomes part of the structural relations of Learning as Knowing Why (B2), and students begin to focus on the why of the structure—the cause and effect, and its relevance and application. These shifts are accompanied by changes in the relation between knower and what is known. For instance, there is a shift from accepting the given links or sequences to finding out the given links or relations. Finding out is subsequently replaced by making relations where the learner experiments with various situations in which what is learned can be applied (pale grey cells, Table 9.2).

3) Shifts from relational to constructive experiences of learning: the earlier shift to an experience of learning in which relations between learner and knowledge are made appears to be an ontological prerequisite for the experience of learning as a network of relations (C1). Here again we see the referential aspect or focus of the previous experience incorporated into the structural relations of this experience. The subsequent shift from part-part relations to a focus on the whole and its parts (C2) reflects a similar merging. In this instance, the notion of relations between parts appears to be a structural prerequisite for experiencing what is learned in terms of the bigger picture or as a whole and its parts (medium grey cells, Table 9.2).

4) Shifts from constructive to transformative experiences of learning appear to involve the ability to adopt the objective stance that was necessary in the previous experience. Yet, the notion of transformation also requires a new awareness through looking at something from another perspective. The
shifts in this last group of experiences reflect a movement from looking at something in a different way (D1), to if one looks at something differently one changes (D2), to the use of perspective to construct a different view (D3), to the constitution of self by the use of the mind as a tool (D4) (dark grey cells, Table 9.2).

A close examination of these results and a comparison with other literature suggests that there may be a general pattern of change and development of experiences of learning. The results also hint at the way in which changes in experience may occur. These two characteristics are discussed in the following sections.

A Pattern of Change and Development?

If for a moment we ignore the focus on change or development in the descriptions of experiences outlined above, and observe the differences in the four groups of experiences, we see a general pattern of variation that involves reproducing, relating, constructing, and transforming knowledge. This pattern is paralleled in other research. For example, at a general level, these four experiences replicate experiences in Säljö's (1979) and Marton, Dall'Alba and Beaty's (1993) conceptions of learning. The pattern of variation also resembles that which is evident in research on forms of understanding (Entwistle & Entwistle, 1991), knowledge objects (Entwistle & Marton, 1994), understanding (Wen & Marton, 1993), and knowledge (Dahlgren & Pramling, 1985).

Despite the differences in perspective, a similar pattern of change is evident in research on the development of epistemic beliefs (e.g., Baxter Magolda, 1992; Belenky et al., 1986; King and Kitchener, 1994; Perry, 1970). For example, Kuhn's (1991) three stage scheme of absolutist, multiplist and evaluative thinking corresponds to reproductive, relational and constructive experiences respectively. There is similar correspondence between Kramer's (1989) framework of seven levels of the development of relativistic and dialectical reasoning (see Chapter 2, p. 46) and the experiences reported above. For example, her characterisation of the early experiences of reasoning in terms of little or no differentiation and differentiation and integration of cause-effect sequences resembles the reproductive experiences reported in Chapter 5 and experiences of Learning as Relating: Remembering How and Knowing Why of Chapter 6. The focus on differentiation and integration of consistencies and inconsistencies into systems,
and the contextual differentiation of systems is analogous to the more wholistic experiences of learning that are seen in Chapter 7. Her description of the dialectical integration of systems into evolving social structures comprises an aspect of the experiences of learning reported in Chapter 8. At a more general level a similar comparison can be drawn between Kitchener's (1983) three tier cognitive developmental model that comprises cognition, metacognition and epistemic cognition and the four experiences outlined above.

The longitudinal nature of the data, and the fact that students show changes in their experiences over time, make it possible to argue that this pattern of variation constitutes a more general pattern of development of and change in the meaning and structural relations of the experience. In Chapter 2, I argued that, in general, research on epistemic beliefs has tended to focus on the structural aspects of development and ignores the means of development. In the sections below I address more specific aspects of a possible pattern of development and then look at the possible means of change.

**Piaget's Assimilatory Activities—Similarities and Differences**

The four experiences described in Chapters 5-8 show a marked resemblance to Piaget's (Montangero & Maurice-Naville, 1997) four kinds of assimilatory activities (Chapter 2, p. 51). To recap, Piaget's first kind, reproductive assimilation is a repetitive activity that is concerned with the conservation of what one knows. This cognitive process can be aligned with the experiences described in Chapter 5 and in Learning as Relating: Remembering How in Chapter 6. Piaget's second kind, recognitive assimilation involves discrimination or comparison between new knowledge and what was known previously to facilitate the selection of an appropriate scheme. This description matches the experiences of Learning as Relating: Knowing Why and Understanding Where that were described in Chapter 6. Piaget's third kind, generalising or transposing assimilation allows the use of a scheme in new situations or with new objects and thus opens the way for the acquisition of new knowledge. This process is akin to the more contextual and relative experience of Learning as Relating: Understanding Where (Chapter 6) and Understanding as Relating (Chapter 7). Finally, Piaget's reciprocal assimilation allows the co-ordination of schemes that initially may have been applied separately to the same content (Montangero & Maurice-Naville, 1997; Piaget, 1977). This kind of assimilation suggests the use of a skill base that resembles those described as Constructive Experiences in
Chapter 9: The Development of Experiences of Learning

Chapter 7. These resemblances suggest that rather than tying Piagetian assimilatory processes, perhaps inappropriately, to stages of development, they may be better conceptualised as an ongoing influence.

Historical Experiences of Understanding

Interestingly, from an entirely different perspective and a much more general level, the meaning and variation in experiences of learning and understanding that are described in Chapters 5-8 mirror almost exactly the pattern of variation of historical conceptions of hermeneutic understanding that I outlined in Chapter 1. For example, in Learning as Gaining Knowledge and Learning as Reproducing students focus on learning at the level of words and are concerned with the idea of correct reproduction of authoritative knowledge. Likewise, early conceptions of interpretation focused on the precise reproduction of grammatical structures. The concern with steps or procedures that dominates Learning as Remembering How (B1) is reflected in pragmatic hermeneutics where the object of interpretation as explication of the rules of the discourse was enacted in an application of the rules. The shift that we see from experiences of learning as a mechanical activity to those which are concerned with understanding in Constructive Experiences of Learning has its parallel first in Schleiermacher's more contextual and relative hermeneutics and later in Dilthey's more experiential focus. In constructive experiences of learning and in Dilthey's hermeneutics, the notion of meaning is figural. Specifically, the focus on both the process and outcome of understanding in Understanding as Relating (C1) is evident also in Dilthey's conception of Erlebnis. The counterparts of Heidegger's and Gadamer's conceptions of understanding as being in the world, and their notion of the knowing relation as a the mode of being find their counterparts in the more transformational experiences of learning that are described in Chapter 8.

The Nature of the Commonalities?

Such similarities across a range of perspectives and approaches to research cannot be mere coincidence. At the same time, it is inappropriate to characterise such patterns of change in the development of adult experiences of learning in terms of stages or positions. So what are we observing here? The focus of this research is to trace the changes in learners' experience as they engage in their undergraduate study. In Chapters 7 and 8 we saw the gradual movement towards experiences of learning and understanding that become increasingly individually constructed,
personal and self-constitutive. Yet, at the same time learners are also more aware of the situatedness of themselves as individuals in a social environment. Thus, it may be argued that the development of experiences of learning and understanding, and particularly those which are constructive and transformative, are experienced as unique and personal but the gradual morphing of the relationship between knowers and known assumes certain common patterns of meaning and structure. The implications of this idea for research on phenomenographic categories of description are interesting. The phenomenographic description of variation in the meaning of an experience of a phenomenon may also capture the pattern of change and development in experiences of that phenomenon. It requires further research with a focus on development to verify this idea.

The Nature of Change in Experiences of Learning?

An inevitable corollary of a focus on development and change is to ask the question: how do we shift from experiencing something in a certain way to experiencing it in a different way? In the analysis of the data sets of individuals, I sought the threads of continuity and discontinuity that would reveal the nature of the shifts and changes. It became evident that the shadow or hint of subsequent experiences was often evident in the immediately prior experience. Indeed, retrospective observation of the data indicated that future experiences could be predicted. Hence the adoption of the notion of morphing. For example, the focus on the background of the knowledge that comprises part of the referential aspect of Learning as Relating: Knowing Why (B2), is evident in some of the data of Learning as Relating: Remembering How (B1). Likewise, the use of inference that forms part of the referential aspects of Knowing Why is evident in Andrew's comment in Remembering How (p, 210).

However, a more interesting characteristic is the way in which, on the face of it, what is figural as the referential aspect of one experience tends to disappear from view in the next. In my data, the nature of the apparent disappearance was relative—sometimes it seemed only partial and at other times it was complete. This kind of within-category variation is to be expected in analytic procedures that focus on individuals' data rather than within-individual data. The phenomenon of the disappearing figure may account for the qualitative differences in description that constitute an important characteristic of an outcome space in phenomenography.
In phenomenography, the relation between categories of description has been explained by Säljö's (1975, p. 59) "implicative model" in which each category of description becomes subsumed in a subsequent category of an outcome space (see Chapter 3, p. 106). This idea implies that the previous experience becomes an unchanged part of the next experience—a notion that is analogous to the relationship between the individual dolls in a set of nested Russian dolls.

However, by using Marton and Booth's (1997) what/how framework in analysis we see an alternative explanation for the relationship between categories. In the summary of the four groups of shifts in experience along the length of the dimension of learning that I described above, I referred several times to the way in which the referential aspect of the previous experience appears to be incorporated or merged into the structural relations of the next. Moreover, the incorporation or merging appears to change the meaning and structure of the subsequent experience. For example, in Table 9.2 we see that the referential aspect to see something differently becomes evident as: you become aware and see something differently in the structural relations of the subsequent experience. Remembering how to use/do something correctly—knowing the given structure, steps or sequence provides another example. In the subsequent experience it is evident in finding/working out the relation or pattern. This kind of shift is also evident in the change from a focus on a network of relations in Understanding as Relating (C1) to the incorporation of constructing a whole in Understanding as Seeing the Whole (C2).

An understanding of development as a shift from referential aspect to structural relation is convenient. It allows the nature of change to be characterised in terms of an increasing spiral of understanding rather than abrupt stages or levels. As a characterisation of developing understanding, it is analogous to Gadamer's (1989) transformative notion of the hermeneutic circle inasmuch as what we understand is already anticipated in prior experience (the ghosts that I mentioned above). According to Gadamer (1989) it is experience that changes the person who experiences. Luke argued similarly about the nature of experience in Chapter 8. This notion of development bears some resemblance to Piaget's (Montangero & Maurice-Naville, 1997) accommodative processes of change that he described as a continuing, and dynamic spiral. Indeed, the shift from referent to structure may be akin to his "progression with repetition" (p. 92).
in which analogous construction processes are evident in each experience. These apparent similarities suggest that the movement from referent to structure may contribute to, or be the engine of, the morphing that occurs from experience to experience. Furthermore, with an adherence to the internal relations of such experiences, Marton and Booth's (1997) what/how framework is able to detect and provide a mechanism for the description of such change.

It should also be pointed out that in the current study, the movement from the what to the how was not present consistently in every shift in experience. Neither was it looked for as a focus of the original research. Thus, there is room here for further empirical exploration. Moreover, if it does become evident that the movement from the what to the how is a significant aspect of change in the experience of learning then it will need to be supported by a theoretical framework that takes account of non-dualist notions of experience. The significance of this last point may not be immediately apparent from the previous discussion. Here, I refer back to Chapter 3 where we looked at a non-dualist theory of knowledge, the adoption of a second order perspective, and a focus on internal relations. Marton and Booth's (1997) referential aspect and structural relations of the act of learning and its object comprise an integrally interwoven, internal relation. To understand involves an iterative movement between meaning and structure, and structure and meaning. Thus, in the focus on the what and the how of the learner's experience, we see reflected the same movement that characterises the knowing relation—a mutual merging of what is understood and the accompanying act of understanding. So can the shifts in experience that are evident in the data be an outcome of an act of learning that comprises an iterative movement between meaning and structure and structure and meaning of the object of learning? If this is the case, future research in this area may be helped by exploration of learning that taps students' experiences of a more specific knowledge area that is common to all students on each occasion. Note, however, that it may be difficult, if not impossible, to detect such changes using a traditional phenomenographic approach because the continuity of within individual experiences is lost in analysis.

The previous discussion indicates how the research reported in Chapters 5-8 builds on and extends our current knowledge of the nature and development of experiences of learning, understanding, and knowledge. The observation of a more general pattern of change, and this glimpse of the mechanism that relates to
how change occurs, suggests a direction for future research on experiences of learning and of other phenomena. There is room for only a brief allusion to the pedagogical implications of these results. Yet if the relation between knower and knowledge changes through the integration of the referent with structure then we must also consider how the design of tertiary curricula may enhance this process.

The Dimension of Knowledge—An Example of the Scope of Explanatory Ontology

My treatment of the dimension of knowledge differs from that of the dimensions of learning, memorising and understanding. I explore it more fully in order to provide an example of the potential of an explanatory ontology. The dimension is also of interest because learners' experiences of knowledge appear to provide an explanatory framework for their experiences of other phenomena. In making this assertion I do not intend to imply a causal relationship. However, the meaning and structure of students' experiences of other phenomena appear to make sense when explored against the backdrop of their experiences of the meaning and structure of knowledge. This finding parallels research on epistemic beliefs (e.g., Hofer & Pintrich, 1997; Schommer, 1990).

A brief description of the dimensional characteristics of the meaning and structure of knowledge is provided in Table 9.3. The dimension comprises four main groups of changes in experiences:

- shifts from amorphic to more organised conceptions of knowledge (white cells, Table 9.3);
- the growth of increasingly more connected and organised views of knowledge (pale grey cells, Table 9.3);
- shifts in experiences of knowledge that are concerned with personal growth and the increasingly complex construction of knowledge (medium grey cells, Table 9.3);
- views in which knowledge changes from becoming the substance that is moulded to form the self to those in which it is a tool for the constitution of self (dark grey cells, Table 9.3).

Overall, the Table shows a series of morphological shifts from an experience in which knowledge is conceptualised as a given, flat related entity that has little
personal connection with the learner, to an experience in which knowledge is an integral aspect of self-identity. The changes in experience parallel the changes in experiences of learning that were described above. In general, the results also resemble the patterns of change in experiences of knowledge that are evident in research on epistemic beliefs (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970) and in the outcome space of conceptions of knowledge (e.g., Dahlgren & Pramling, 1985). The dimension of knowledge is described in the sections below. This dimension is elaborated in more detail to illustrate the potential of an explanatory ontology.

Changes and Development of Experiences of Knowledge

At the upper pole of the dimension (top cells, Table 9.3) there is evidence of a shift from a relatively fixed conception of knowledge to an experience in which there is an awareness of simple differentiations. Although metaphorically knowledge is conceptualised as a jigsaw, it is not the structure of the jigsaw that students focus upon but the way in which the relationships between the parts are fixed or permanent. If the parts are fixed then knowledge is relatively rigid and concrete and learning involves taking it in verbatim with little emphasis or concern for particular parts. This idea of knowledge as prepackaged means that it requires no further differentiation or organisation. These more limited experiences of knowledge resemble the idea of separatistic knowledge (Dahlgren & Pramling, 1985) and the conception of knowledge that is implied in Wen and Marton's (1993) first category of understanding as paraphrasing. Moreover, we see a similar notion of knowledge in Entwistle and Marton's (1994) knowledge object in their Category A that comprises a condensed summary of material. This view of knowledge also matches Belenky et al's (1992) Received Knowledge.

The change from relatively amorphic to more organised experiences of knowledge is evident in the recognition of simple side-by-side or sequencing relationships in Learning as Reproducing (A2) and Learning as Relating: Remembering How (B1). Nevertheless, the meaning and structure of knowledge continues to be determined by sources external to the learner and the sequences and differentiations are absorbed or learned repetitively. Case 9.1 comprises a brief case study of Margaret's experiences of knowledge over the three years of the study. The case study illustrates the changes mentioned above. In it we see the shifts from an amorphic to a more organised and dynamic notion of knowledge as a procedure to be used. This is the first indication that knowledge
Table 9.3: Morphing of the Experiences of Knowledge

<table>
<thead>
<tr>
<th>The Meaning of Knowledge: the What</th>
<th>The Structural Relations of Knowledge: the How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge is a true, concrete, separate reality. Bits and pieces, facts and figures (level of words) situated in a fixed relationship—a 'flat', but amorphous jigsaw. Learning is taking in the jigsaw.</td>
<td>Pieces understood as linked, side-by-side association. Others (text or teacher) prescribe the meaning and relationship of parts so it need not be differentiated.</td>
</tr>
<tr>
<td>True and concrete, separate from reality of learners. Facts and figures situated in a fixed relationship. The meaning is taken in.</td>
<td>Others prescribe meaning—differentiated as linear sequences and connections, which are learned.</td>
</tr>
<tr>
<td>Given information, linear or building structure (height implied), actively ordered by practice of procedures (mental or physical).</td>
<td>Procedural, additive accumulation of given meaning as linear connections between parts. Focus on steps.</td>
</tr>
<tr>
<td>Given or can be found out and can be used to infer. Is patterned or structured, relevant and applicable—these indicate how it works. There is a rationale or basis for knowledge—it has a background.</td>
<td>Machine metaphor—links or relations show how it works. New knowledge relates to prior knowledge to produce something new. Accumulated but has depth.</td>
</tr>
<tr>
<td>Knowledge is of value and must be relevant. It can be worked out, tried out in different contexts so it is more relative, and plural and personal meaning.</td>
<td>Internal and external structural parameters broaden to include the context of application which is more experimental. Focus: making relations between parts.</td>
</tr>
<tr>
<td>Knowledge is the meaning (relations) that one gives it.</td>
<td>A network of related parts.</td>
</tr>
<tr>
<td>Knowledge is a whole phenomenon that can be looked at in various ways and manipulated.</td>
<td>Focus on whole/parts (height, depth and breadth) that has different angles and relations.</td>
</tr>
<tr>
<td>Knowledge is a dynamic and changeable resource—a collective body of your experience.</td>
<td>Is malleable and changeable according to the way you look at it.</td>
</tr>
<tr>
<td>Knowledge and person form an integral relation—it is the personal accumulation of experience and so it can change.</td>
<td>Changeable, and transformable—by looking at it differently it changes.</td>
</tr>
<tr>
<td>Knowledge is a way to view the world or a tool to manipulate understanding—perspectives are the building blocks of meaning.</td>
<td>Can be constructed and reconstructed—by looking at it differently it changes you.</td>
</tr>
<tr>
<td>Knowledge constitutes oneself and we change according to the constitution.</td>
<td>Constituted and reconstituted.</td>
</tr>
</tbody>
</table>

Key: white—amorphic phase; pale grey—organising phase; medium grey—constructing phase; dark grey—self-constituting phase

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2 Like Table 9.2, the alphanumerical labels of the columns on the right hand side of the Table refer to the categories described in Chapters 5-8 (namely, reproductive, relational, constructive and transformative).
In 1991 Margaret conceptualises knowledge as concrete, correct and given (A1). Information must be given back "right" in the "the way that I'm supposed to." She experiences knowledge as "heaps of facts and figures" and "little bits of information here and there" that are tied up by the lecturers but there may be "holes in your knowledge." She recognises that knowledge is "linked" but she is unable to do the linking until she gains a lot more. Yet, the seeds of her later experiences appear in this experience. For example, she associates linking with using it in the future, where using means relating it and putting it into practice in a way that resembles Learning as Remembering How. She implies that in the future she will have knowledge as "the whole broad picture" and an understanding of "the bits and pieces and then how they work"—a conception that appears to be the basis for her later experiences.

In 1992, Margaret conceptualises knowledge as a procedural sequence (B2). For example, she refers to understanding a procedure as the "steps we've gone through." She provides other evidence of this focus on sequence in the way in which she explains learning: "if I can acquire some knowledge and understand it, which means that I can then put it to further use or explain it to somebody else..." She must work out how she can use it which entails the process she outlines above. Similarly, learning is working through an example or an experience and understanding the steps she has gone through. Knowledge is information or data which has meaning where meaning is associated with knowing its organisation in terms of steps or sequence.

In 1993, Margaret's experience of knowledge shows a further shift. She focuses on why—why certain things happen, and the causes and effects (B2). She comments that she is now able to identify things more clearly, "things are starting to fall into place, everything's coming together so that when I see somebody with a problem or something ... I can link it up." This "fitting together" means that "it all works." She continues to associate understanding with how she can use knowledge and use is being able to relate or link it to other knowledge. For example: "I can actually work out why he's doing what he's doing and it links to several different areas of what we've actually covered." Margaret uses a machine metaphor which is reminiscent of earlier experiences: "if you understand how the machine works and you’ve put all the pieces in the right place’ yet here, the links and relations are "how [the knowledge] works." These passages are typical of Learning as Relating, Knowing Why.

Overall, Margaret provides an example of a shift from an experience of knowledge that is concrete and relatively lacking in structure, to one in which knowledge is linearly organised in terms of steps and procedures, to one which is beginning to be characterised in terms of depth and connected structures. The experiences show a common thread or theme which is a concern for the links and being able to use the knowledge in terms of it working for her.

is experienced as something that can be manipulated. However, in this experience the manipulation is a relatively simple notion involving a recipe or
Chapter 9: The Development of Experiences of Learning

predetermined procedure. Nevertheless, the notion of practice as remembering the steps appears to be an extension of the notion of repetitive memorising that dominated the experiences of Learning as Reproducing (A2). Furthermore, the act of repetition in repetitive memorising appears to have become a structural aspect of knowledge or knowing in Learning as Relating: Remembering How (B1) in a way that resembles the shift from referent to structural aspects of learning that I described earlier in this chapter. In Case 9.1, Margaret also provides a working example of the way in which the practice of the steps becomes incorporated into the notion of knowledge itself.

The second form of early organisation appears to be an advance of the linear sequencing that we saw above. It comprises a connected structure that implies a sense of depth. Joel provides a vivid description in his building metaphor:

...you'd be able to make connections between different things and ... then use that for ... you can build up, like building blocks ... you know you put the brick down, you put the next one beside it, and you can now put another on top of that one (91/82/B). There is no sense at this point that Joel's wall metaphor is more than an organised, multi-linear structure but it is not difficult to see how simple linear connections become more complex and organised. Moreover, there is evidence that the shift in structure from linear sequences to more complex arrangements is accompanied by a change in strategy from that of making connections to making simple inferences. This is evident in the examples that students gave in Learning as Relating: Remembering How (B1) and frequently in Learning as Relating: Knowing Why (B2). Furthermore, the meaning of learning in Learning as Knowing Why (B2) is the linking of new knowledge to prior knowledge to produce something new. Note, in passing, that the direction of relation between knower and known is from the new knowledge to the learner. Note also that the idea of the usefulness, relevance and applicability of knowledge becomes figural with this relation between knower and known. Knowledge must be useful to the learner.

These characteristics are accompanied by evidence of simple inferences—if this, then this. It is unclear how the linear connections of the earlier experience are related to simple inferences but the fact that they appear in the data of adjacent experiences is interesting given the change from knowledge as repetitive practice, to a view in which knowledge must be relevant and applicable. In Learning as Knowing Why (B2) we also see a change from a focus on knowledge as procedure to one in which there is a concern with pattern and structure. Learners constantly refer to why things work, where work characterises cause and effect relations between different parts. Margaret's machine metaphor (see Case 9.1) is typical of the experience. Here we see a qualitative change from the more linear ideas of
previous experiences to one that heralds complexity and depth: "the purpose behind it" (Gemma, 91/73/B) and "why ... it's happening" (Diana, 91/72/A), or "the basis behind what you're telling me" (Lydia, 92/48/A). In the description of this experience (Chapter 6, p. 200) we see that knowledge is a more organic and dynamic phenomenon. It is associated with knowing and being aware. Moreover, this conception is accompanied by a more complex form of agency where knowledge can be given but it can also be found out. Note that in found out, the meaning of the knowledge continues to be determined by external sources. So making something new from the interaction of what is learned with prior knowledge is not a transformative experience for the learner. Rather, it is experienced as something new in the sense that it is found out using various expert sources. This complex of relations between inference, more dynamic notions of knowledge, the idea that it should be useful, can be found out, and a search for pattern and structure is interesting and requires further investigation. In general, these experiences of the increasing structure and organisation of knowledge parallel Belenky et al's Procedural Knowing and Dahlgren and Pramling's (1985) Knowledge as Sequential.

The third group of experiences comprise changes in views that reflect a shift from relational views of knowledge to constructive experiences that are associated with personal growth (medium grey cells, Table 9.3). For instance, in Learning as Relating, Understanding Where (B3) the meaning of knowledge continues to be associated with relating different parts, or applying, but there is a shift in agency. In earlier experiences, knowledge was prescribed by expert source—text or teacher. In the latter part of Chapter 6 we begin to see how ideas of knowledge become more associated with personal value (e.g., Chapter 6, p. 218). The learner begins to take a personal role in determining the meaning of knowledge. The change in views of agency is accompanied by a parallel shift in the direction of relation between the knower and the knowledge. In the previous group of experiences the relation appeared to be from new knowledge to what is already known. In these later experiences, prior knowledge is used with or applied to new knowledge to create something new. At the same time the internal and external structural parameters shift, and the concept of knowledge broadens to accommodate these changes. The notion of knowledge is acknowledged to be complex and the meaning and structure of knowledge are now understood in terms of the context of its application. As the boundary of the context of application extends and becomes less well defined and more experimental, there
is an accompanying shift in focus from a concern with the reasons why or a rationale for the knowledge, to a more central concern with its meaning in different contexts. Indeed, the meaning of knowledge starts to become central to the learners' experiences. Knowledge is understood as more relative and plural and of value—learners have a growing sense of ownership. Paradoxically, these changes are accompanied by a more detached or objective view of knowledge. This change to both personal and more objective views of knowledge parallels the notion of knowing as iteration between first and second order perspectives that I discussed in Chapter 3.

In *Understanding as Relating* (C1), "knowledge is meaning" (Anya, 91/81/B) where meaning is a network of relations between part and part. The fact that learning is concerned with making a network means that knowledge is of necessity personal—what it "mean[s] to you as opposed to what ...[it] might mean to somebody else (Anya, 91/81/B). This more relative notion of knowledge begins to resemble Perry's (1970) *Commitment Within Relativism* (positions 5-6) and Baxter Magolda's (1992) *Independent Knowing*. In Chapter 7, we saw a further shift in *Understanding as Seeing the Whole* (C2) to a notion of knowledge that is both personal and wholistic where the focus on whole is on both the whole and its parts in terms of whole/part relations. For example, Carl (p. 263) provided an illustration of the movement between principle and example and students talked of "taking things as a whole" (Lotta, 91/72/B) and "knowledge is made up of components of things that have meaning" (Carl, 92/88/A).

Thus, in these experience we see the gradual construction of knowledge, first as a network of internally related parts, and then as a whole phenomenon. These constructive experiences (described in Chapter 7) resemble those of Baxter Magolda's *Independent Knowing*. The more wholistic ideas of knowledge that are evident in later experiences parallel the notion of knowledge that is inherent in Entwistle and Marton's (1994) knowledge object as *Understandings reflecting the phenomena through knowledge restructuring* (Category D). Moreover, the quasi sensory experiences that prompted Entwistle and Marton’s research, and that feature in their Category D, are also evident in the experiences described in Chapter 7. However, unlike the previous research on knowledge objects, the results reported in this thesis relate to more general experiences of learning. Like Entwistle and Marton’s knowledge objects, students’ experience is accompanied
by a growing ability to manipulate knowledge which heralds the transformative views of knowledge described in Chapter 8.

The gradations that are evident in these later experiences of knowledge reflect and are intimately connected with the growing skill base of the learner. They show a shift from the idea of knowledge as personal meaning which can be manipulated and changed, to a notion of knowledge as a lens through which to see the world, to the idea that one's knowledge constitutes oneself. The wholeness of Learning as Understanding the Whole has now been transferred to the whole of the experience of learning. We saw in Chapter 8 how learning is concerned with the whole experience in its broader context including temporal extensions into the past and the future. Despite some features in common with Belenky et al's (1986) Constructed Knowledge, much of the substance of Chapter 8, appears not to be reported elsewhere.

This fourth group of experiences show shifts in views of knowledge that focus increasingly on the development of self (dark grey cells, Table 9.3). In Learning as Looking at Something in a Different Way, (D1) knowledge has multiple meanings and is characterised as an accessible resource that is dynamic and changing. Learning is "honoring particular skills (Carl, 93/1/A) or "applying your intellectual muscle" (Luke, 92/2/B). So knowledge is the substance that is honed or refined through such application. Knowledge and skills are situated together in an integral relationship. In Learning as Change and Development (D2) these characteristics are further developed. One's knowledge derives from life experience and it changes as those experiences change. We saw how Joanna (93/67/A) understands knowledge "as a form of personal awareness". In this conception the idea of knowledge as a resource is extended. It is the substance of self awareness and as such allows further learning to occur. I noted in Chapter 8 how this notion may be the forerunner of Learning as a Constitutive Act. As skills develop and the learner becomes increasingly competent and confident, we see the gradual merging of knower and known. Knowledge is no longer experienced in terms of structure, or personal meaning, but as a tool for living. The metaphor here is one of crafting or creating where knowledge is the clay out of which one constructs one's life. For example, in Learning as Constructing a World View (D3), Luke understands knowledge in terms of perspectives or paradigms through which he is able to understand the world. Moreover, he indicates that he makes perspectives work to enhance his understanding. So the
view of knowledge as self awareness now becomes a more concrete tool. In *Learning as Constituting Self* (D4) we see knowledge experienced as something that defines oneself as the sum total of one's experience. These later experiences of knowledge are central to the phenomenal field yet they are not described in previous research.

**Dimensional Characteristics of Memorising**

In this study, I specifically problematised the notion of memorising. When participants talked of memorising I asked them what it meant for them and how they went about it. They also provided examples of memorising specific content. When memorising was not mentioned in their initial elaboration of their experiences of learning, and this situation occurred often, I introduced the term. Sometimes on these occasions, students then referred to *rote* memorising for exams or tests. However, when students were asked if they rote memorised, their responses resembled those of the Chinese students in the studies described in Chapter 3 (e.g., Marton, Watkins & Tang, 1997; Wen & Marton, 1993). That is, many of them implied that they only did so when they had to. In fact, many of the students who experienced learning in terms of understanding or transformation suggested that rote memorisation was difficult if not impossible to do.

The story of the growth of experiences of memorising can be traced in Chapters 5 - 8. It shows that if we step aside from the traditional Western interpretation of memorising as rote learning (Wen & Marton, 1993) and explore what learners mean when they talk of memorising and what they actually do when they memorise, we see a fascinating pattern of growth in a phenomenon that is clearly an essential part of learning. For instance, in this study, the meaning of memorising gradually shifts from a relatively passive and indiscriminate absorption to one which is the means of constituting one's own identity. Thus, as a dimension, memorising shows the same kind of variation that is evident with the phenomena of understanding and knowledge. The range of variation and what appear to be important shifts in meaning and structural relations are summarised in Table 9.4.

Like those of learning and knowledge, the dimension of experiences of memorising can also be grouped into four main sets of experiences. The groups show similar shifts within and across experiences.
Table 9.4: Morphing of the Experiences of Memorising

<table>
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<tbody>
<tr>
<td>To accumulate words and given relations to memory through passive absorption or repetition e.g., reading and writing.</td>
<td>Relatively indiscriminate memorising of more and more information until you know a lot.</td>
<td>x</td>
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<tr>
<td>To remember: committing words or formulae to memory through purposeful repetition.</td>
<td>Passive absorption and/or purposeful repetition of facts in order to reproduce them.</td>
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<td>x</td>
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<tr>
<td>To remember by committing the given meaning to memory through purposeful rehearsal of the meaning.</td>
<td>Purposeful repetition of the act in order to reproduce the given meaning.</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Remembering as rehearsing how to do it or how to apply (relate) it.</td>
<td>Reproductive, repetition or recall of the practice, the 'how', the steps or procedures.</td>
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<td>x</td>
<td>x</td>
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<tr>
<td>Memorising is reinforcing the links or connections between different parts.</td>
<td>Reinforcing is associating one part with another.</td>
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<td></td>
<td>x</td>
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<tr>
<td>Reinforcing by trying it out in new situations.</td>
<td>Relating what is known to something new.</td>
<td></td>
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<tr>
<td>Memorising is an aid to developing relations.</td>
<td>Thinking about and associating knowledge.</td>
<td></td>
<td></td>
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<tr>
<td>Memorising is using a number of different strategies to manipulate understanding and make relations—it is enhanced by understanding.</td>
<td>Knowing the relations (understanding) allows you to look at it differently.</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Memorising is a tool for learning: a skilful activity that is necessary for learning.</td>
<td>Skilled rehearsal or practice through visualisation, comparison, reflection and critical analysis.</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>Rehearsing the construction of meaning.</td>
<td>You make connections, you see the stuff happening, and this builds on the interconnections.</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
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Key: white—memorising as absorbing and repeating; pale grey—memorising as remembering by committing words or meaning to memory; medium grey—memorising as relating; dark grey—memorising is a tool for learning.

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3 Like previous tables, the alphanumerical labels of the columns on the right hand side of the Table refer to the categories described in Chapters 5-8 (namely, reproductive, relational, constructive and transformative).
1) Memorising as absorbing and repeating: an activity in which information is absorbed indiscriminately (A1) (white cells, Table 9.4).

2) Shifts in experiences from committing words or meaning to memory by repetition (A2), to a practice of the sequence or steps (B1), to intentional rehearsal of how to do something which may be mental or physical (B2). These experiences comprise increasingly more organised and purposeful activities (pale grey cells, Table 9.4).

3) Shifts that range from memorising as reinforcing the links or connections (B2), to trying something out by applying something either mentally or physically (B3), to using memorising to aid the development of relations (C1), to manipulating understanding in order to enhance it and see something differently (C2). These acts of memorising involve an increasingly wider range of strategies that enable the learner to make relations between themselves and the knowledge (medium grey cells, Table 9.4).

4) Experiences of memorising that increasingly involve the use of skilled activities that are integral to learning. Memorising is a constructive activity that is in continuous use and forms part of the competent and confident learner (D1-4) (Table 9.4, dark grey cells).

These results are consistent with and complement studies of Chinese students' experiences of memorising (e.g., Marton, Dall'Alba & Tse, 1993; Marton, Watkins & Tang, 1997; Wen & Marton, 1993) in which students distinguish mechanical memorising from forms of memorising with understanding. Nevertheless, the present experiences of memorising differ significantly from those described in many previous studies (e.g., Marton, Dall'Alba & Beaty, 1993; Säljö, 1979; 1982) in which memorising has been opposed to understanding. For example, in Marton, Watkins and Tang's (1997) characterisation of the depth and temporal dimensions of learning, memorising is replaced by understanding in that part of the outcome space where depth of learning is represented.

The Dimensional Characteristics of Understanding

The meaning and structural relations of the experiences that make up the dimension of understanding are shown in Table 9.5. Like the dimensions
### Table 9.5: Morphing of the Experiences of Understanding

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<tbody>
<tr>
<td>To know a lot by taking in the links. Focus on the word or memorised concept.</td>
<td>Learned facts and figures are linked together. Understanding is suspended until a lot is learned.</td>
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<tr>
<td>Knowing (memorised) the given meaning—how things are joined together and/or the idea behind it in your own words.</td>
<td>You remember all the facts joined together and it can be conveyed to someone else so they can grasp it.</td>
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<tr>
<td>Knowing the memorised process or the steps, how it works, the idea behind it, how it relates to other things—the steps or process.</td>
<td>Recognising or working out the steps/structure.</td>
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<tr>
<td>Knowing the relations, the why—the cause and effect, history and implications.</td>
<td>Knowing how different parts are related, where things fit, or how things work.</td>
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<tr>
<td>Knowing the meaning, being fully aware of all aspects of the knowledge, how to apply it in different contexts.</td>
<td>Trying it out, making relations with new contexts.</td>
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<tr>
<td>Knowing or seeking the meaning of the parts and their relations—how the context affects the meaning.</td>
<td>Seeking the relations—new knowledge interacts with prior knowledge to produce new understanding.</td>
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<tr>
<td>Experiential, coming to know the whole and its parts, the ongoing act of becoming—developing as a person.</td>
<td>Each new experience contributes to learning so learning is a continuous process.</td>
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<td></td>
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<tr>
<td>Having insight or awareness of something, looking at something differently.</td>
<td>Coming to know something—a continuous process of growing comprehension.</td>
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<td></td>
<td></td>
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<td>x</td>
<td></td>
</tr>
<tr>
<td>To grasp the central meaning of something, to know and have confidence in what you know, being able to apply it—having empathy, seeing something differently.</td>
<td>To perceive it differently and put it in a new light.</td>
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<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Understanding is a world view—a way of thinking.</td>
<td>Understanding is constructed and reconstructed.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Subjective, one's state of reality is knowledge or truth.</td>
<td>Understanding is created, or reconciled and can change</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Key: white—understanding suspended; pale grey—reproductive understanding; medium grey—experiential or constructed understanding; dark grey—transformative understanding
Chapter 9: The Development of Experiences of Learning

described above, the dimension of understanding can also be organised into four main groups of experiences. They are:

1) Suspended understanding: understanding is suspended until one knows a lot. It is taking in the given links or connections (A1) (white cells, Table 9.5).

2) Shifts that range from experiences of understanding as knowing the given meaning, sequence or structure—how things are joined together (A2), to knowing how the different parts are related, or fit together, or work (B1). The latter experiences are also associated with the given why in terms of history (why it exists) and implications, cause and effect, or relevance. These experiences of understanding are largely reproductive but the meaning of reproduction varies as the learner's notions of knowledge become more organised (pale grey cells, Table 9.5).

3) Shifts in notions of understanding from being aware or knowing the meaning (B3), to seeking the meaning of the parts and their relations (C1), to a more experiential notion of understanding in which knowledge is constructed in terms of the whole and its parts (C2). In these experiences, understanding comprises both a process and an outcome and appears to become more generally associated with one's development as a person (medium grey cells, Table 9.5).

4) Transformative understanding: in which what is constructed either changes what was originally understood (D1), changes the learner in some way (D2), or constitutes them as an individual (D4) (dark grey cells, Table 9.5).

The experiences that are outlined above, and in Table 9.5 complement the research described in Chapter 3. For example, at a general level, the first three groups of experiences resemble the forms of understanding reported by Entwistle and Entwistle (1991) and Wen and Marton's (1993) categories of understanding. Similarly, the four groups of experiences also match Entwistle and Marton's (1994) four categories of knowledge objects. Given the differences in research intention amongst the different studies reported in Chapter 3, it is difficult to compare the referential aspects of the results at a detailed level. For example, the participants in Entwistle and Marton's (1994) study of knowledge objects focused
specifically on their experiences of preparation for final year degree examinations in the UK, and their results reflect this orientation.

However, the results described above and in Table 9.5 do extend our knowledge of understanding in several ways. First, the description of the fourth group of experiences provides us with a more detailed elaboration of transformative experiences of understanding. Moreover, the results indicate that throughout the dimension, the meaning of understanding is concerned with the relation between parts of knowledge (e.g., understanding suspended and early experiences of reproductive understanding) and/or the relation between the knower and what is understood. The results also suggest that understanding can be characterised as an increasing integration or merging of the individual as knower and what is known. More importantly, and unlike results associated with research on conceptions and approaches to learning (e.g., Säljö, 1979, 1982), students who experienced learning in a relatively limited way also sought to understand, but the understanding they intended differed from that sought by students who experienced understanding as transformative.

**Dimensional Aspects of the Phenomenal Field: A General Comment**

In the previous sections I outlined the dimensional characteristics of four phenomena that contribute to the phenomenal field of learning. These results derive from interviews in which the data were generated through in-depth interviews. The topics were prompted by me, but the data that gave rise to the descriptive ontology presented in these chapters were driven predominantly by participants' perspectives—a second order perspective. The substance of the results is supported by the fact that different aspects of the dimensions and their relations have been reported previously in various studies (e.g., Entwistle & Entwistle, 1991; Marton et al., 1997). These studies also lend support to the proposal for a multi-dimensional phenomenal field. Moreover, the substance of the dimensions reported above is compelling. The tables suggest that all four dimensions are highly correlated with each other. The fact that they were able to be described within a single study, and the explanatory nature of the ontological description extends our knowledge of learning as a phenomenal field.

Despite the fact that not all participants experienced all four experiences, there is sufficient evidence of progressive change to suggest that learning in higher education involves a passage from one experience to the next. Further, this
passage comprises both a process and a structure or **pattern of change from** reproductive learning/understanding, *to* relational learning/understanding, *to* constructive learning/understanding, *to* transformative learning/understanding.

The fact that this proposition finds support in research on epistemic beliefs and experiences of learning, knowledge and understanding implies that elements of this passage are generalisable. Furthermore, the gradual morphing of the learners' experiences suggests that each part of this passage is important. I try to promote transformative experiences of learning in my curricula. The results of this study may explain why my attempts are only partially successful. Instead, it may be important to design curricula that facilitate shifts through each experience.

**Cross Dimensional Relationships**

In the sections above, I unpacked the meaning and structural relations of selected dimensions. However, the characteristics of each dimension and the similarity in the patterns of change across each dimension indicate that the dimensions are strongly internally related to each other. Indeed, a comparison of the tables shows how the variation in meaning and structure across each dimension is integrally related to and defined by the meaning and structural characteristics of its concurrent counterparts in the other dimensions. In the following sections, I provide a brief outline of the relationships of learning and understanding, and memorising and understanding in order to illustrate the high degree of internal relatedness between dimensions.

**The Relationship Between Learning and Understanding**

The nature of the internal relations between the dimensions of learning and understanding provides a picture of a fascinating interplay of meaning and structure that appears to mirror the overall patterns of change across the phenomenal field. An outline of the meaning of these phenomena and the meaning of the internal structural relationship in each experience is provided in Table 9.6. The Table was assembled from analysis of the internal relations of the experiences that are reported in Chapters 5-8.

What we see in Table 9.6 are a series of shifts in the meaning and structure of learning and understanding as learners' experiences change and develop. The shifts appear as **reversals** in the temporal locations of the two phenomena. For example, sometimes learning is understood to lead *to* understanding and
Table 9.6: The Structural Relations of Learning and Understanding

<table>
<thead>
<tr>
<th>Experience</th>
<th>Learning</th>
<th>Understanding</th>
<th>Structural Relations of Learning and Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>To gain more knowledge by absorption or repetition.</td>
<td>To know a lot by taking in the links.</td>
<td>Separately conceptualised—you must learn a lot before you can understand.</td>
</tr>
<tr>
<td>A2</td>
<td>To absorb it and/or commit words/formulae to memory in order to reproduce it by telling or explaining.</td>
<td>Knowing the given meaning—how things are joined together.</td>
<td>Learning and understanding are the same. You can reproduce it. Learning means that understanding has occurred.</td>
</tr>
</tbody>
</table>
| B1         | Remembering how to use/do something correctly—knowing the given structure, steps or sequence | Knowing the memorised process or steps, the idea behind it, knowing how it works. | a) Not discriminated, learning means understanding has occurred.  
b) Learning comes before understanding. |
| B2         | Using knowledge for its proper purpose, knowing how and why it is applied. | Knowing the relations: the why—cause and effect, history and implications, where it fits. | Understanding is the outcome of learning. You learn by knowing how and why and come to understanding. |
| B3         | Understanding and/or seeking situations where knowledge can be applied and knowing why it is relevant. | Knowing the meaning, being aware of all its aspects and how to apply it in different contexts. | To understand/know why you apply it means that you can learn. Understanding precedes learning. |
| C1         | Understanding the meaning of the knowledge by making relations between part and part, forming a network. | Knowing or seeking the meaning of the parts and their relations—how the context affects meaning. | Understanding is learning;  
1) To learn produces understanding (outcome).  
2) Learning requires understanding (process). |
| C2         | Understanding the bigger picture, acquiring knowledge of the whole and its parts. | Coming to know the whole and its parts, the ongoing act of developing as a person. | Relative: the relation differs according to the context in which it occurs. |
| D1         | To see something differently. Continuing acquisition of a transferable skill base. | Never complete. Insight, awareness of something, looking at something differently. | Learning is the process of coming to understanding and understanding is the outcome of learning. |
| D2         | Through experiencing something new or differently you change the way you behave, think or feel about something. | To know and have confidence in what you know, being able to apply it—having empathy, seeing something differently. | Through learning, what is understood is applied. Understanding leads to learning, leads to understanding. |
| D3         | A way of looking and thinking, by which one understands or acts upon the world. | Is a world view—a way of thinking. | Learning constructs understanding which is changed by learning. To learn is to understand is to learn. |
| D4         | Constituting oneself as a better human being. | Subjective, one's state of reality is knowledge or truth. | You learn to gain a better understanding. A deep understanding can drive the process. |
sometimes understanding is a prerequisite for learning. However, rather than a recursive kind of reversal where each replaces the other in the same spatial plane, what becomes evident is that the changes in relation between learning and understanding form a spiral of increasingly complex internal relations. These are outlined below.

The first change of relation occurs between Learning as Gaining Knowledge (A1) and Learning as Reproducing (A2). In the former experience, learning and understanding are understood as separate entities. In the latter they are not discriminated—learning implies that understanding has occurred. The logic of these and subsequent relationships was described in previous chapters. In Learning as Remembering How (B1) and Why (B2), learning is understood to lead to understanding. These shifts in relationship are accompanied in these early experiences by a shift in the meaning of learning from a largely reproductive experience to one in which the relation between the learner and knowledge assumes increasing importance. However, the fact that learning leads to understanding may be explained by an act of learning that is largely reproductive.

In Learning as Understanding Where (B3) there is another shift. In this experience understanding precedes learning. It may be significant that this change in relation between learning and understanding occurs in parallel with the reversal of the direction of relation between the learner and what is learned. To recap, prior to this point, learning is understood as relating new knowledge to something that is already known in order to make something new. The direction of relation is from the knowledge to the knower. In Learning as Understanding Where (B3), this relationship is reversed. The direction of relation is from the knower to what is to be known and learning is understood in terms of relating what is known to new knowledge in different situations. These two shifts in relation between learning and understanding, and knower and knowledge may account for Marton et al's (1993) use of 'watershed' to describe the difference between their categories of Learning as Applying and Learning as Understanding (e.g., Marton et al., 1993).

There is a further shift in relations in Understanding as Relating (C1). In earlier experiences, understanding tended to be regarded as an outcome or what of learning. In the reversal that characterised the previous experience, understanding was merely required for learning. However, in Understanding as Relating
learning is conceived as a process or how, and outcome or what. In this experience, understanding is learning. It is as if, in this more active conceptualisation of understanding, learners have learned to understand. The meaning and structural relations of the relationship between learning and understanding change again in Learning as Understanding the Whole. In this experience the meaning of the relationship is dependent upon the context in which it appears. Table 9.6 shows how subsequent experiences of the relationship reflect an increasingly coherent spiral in which the two phenomena are separate but integrally related parts of a process in which the learner becomes more and more personally involved.

Glimpses of this temporal sequencing were seen in Nagle & Marton's, (1993) observations of understanding-learning-understanding, and in Mugler & Landbeck's (1994) learning-understanding-learning that I discussed in Chapter 3 (p. 114). What is evident in the more detailed description in Chapters 5-8, and in the dimensional inter-relations that are outlined above, is that the phenomenal field is constituted of a complex set of inter-relations that have only just begun to be explored in educational research.

The Relation Between Memorising and Understanding

Table 9.7 provides an overview of the meaning and structural relations of memorising and understanding. In each experience we see a coherent internal relation between the two phenomena. For example, in the earlier experiences the meaning of memorising as reproduction, and the fact that understanding is an outcome of learning, explain the fact that understanding is to reproduce the given meaning. In later experiences we see the interaction of memorising and understanding in the active construction of meaning. Indeed, there is a shift in meaning from memorising as a tool for understanding to memorising as rehearsal as a means of thinking. Thus, these later forms of memorising play a significant role in autonomous or self-directed learning. With the exception of studies that relate to Chinese conceptions of memorising and understanding (e.g., Marton, Dall'Alba & Tse, 1993; Wen & Marton, 1993), the meaning of these two phenomena and of their interrelations differs considerably from that reported in earlier studies (e.g., Marton et al., 1993; Ramsden, 1981; Säljö, 1982) or their more general treatment in the literature on student learning. Moreover, the interpretation that the differences between Western and Chinese students experiences of memorising and understanding is due to culture (e.g., Marton,
Table 9.7: The Structural Relations of Memorising and Understanding

<table>
<thead>
<tr>
<th>Experience</th>
<th>Memorising</th>
<th>Understanding</th>
<th>Structural Relations of Memorising and Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>To accumulate words and given relations to memory through passive absorption or repetition e.g., reading and writing.</td>
<td>To know a lot by taking in the links.</td>
<td>Understanding suspended.</td>
</tr>
<tr>
<td>A2</td>
<td>To remember: committing words or formulae to memory through purposeful repetition.</td>
<td>Knowing the given meaning—how things are joined together.</td>
<td>What is remembered is the given meaning.</td>
</tr>
<tr>
<td>B1</td>
<td>To remember by committing the given meaning to memory through purposeful rehearsal of the meaning.</td>
<td>Knowing the memorised process or steps, the idea behind it, knowing how it works.</td>
<td>Memorising is the purposeful rehearsal in order to understand.</td>
</tr>
<tr>
<td>B2</td>
<td>Remembering as rehearsing how to do it or how to apply (relate) it.</td>
<td>Knowing the relations: the why—cause and effect, history and implications, where it fits.</td>
<td>Rehearsing what is relevant or the why in order to understand.</td>
</tr>
<tr>
<td>B3</td>
<td>Memorising is reinforcing the links or connections between different parts.</td>
<td>Knowing the meaning, being aware of all its aspects and how to apply it in different contexts.</td>
<td>Understanding allows the rehearsal or application in different contexts.</td>
</tr>
<tr>
<td>C1</td>
<td>Reinforcing by trying it out in new situations.</td>
<td>Knowing or seeking the meaning of the parts and their relations—how the context affects meaning.</td>
<td>Memorising as rehearsal reinforces understanding.</td>
</tr>
<tr>
<td>C2</td>
<td>Memorising is an aid to developing relations.</td>
<td>Coming to know the whole and its parts, the ongoing act of developing as a person.</td>
<td>Memorising aids understanding.</td>
</tr>
<tr>
<td>D1</td>
<td>Memorising is using a number of different strategies to manipulate understanding and make relations—it is enhanced by understanding.</td>
<td>Never complete. Insight, awareness of something, looking at something differently.</td>
<td>Memorising and understanding are iterative.</td>
</tr>
<tr>
<td>D2</td>
<td>Memorising is a tool for learning: a skilful activity that is necessary for learning.</td>
<td>To know and have confidence in what you know, being able to apply it—having empathy, seeing something differently.</td>
<td>Memorising is the skilled use of understanding.</td>
</tr>
<tr>
<td>D3/D4</td>
<td>Rehearsing the construction of meaning.</td>
<td>Is a world view—a way of thinking. Subjective, one's state of reality is knowledge or truth.</td>
<td>The rehearsal of the construction provides a means of thinking.</td>
</tr>
</tbody>
</table>
Dall'Alba & Tse, 1993; Wen & Marton, 1993) is premature. Similar differences have been found in the Australian students' experiences in this study.

**Depth, Temporal and Spatial Dimensions?**

In Chapter 3, I drew attention to possible dimensional aspects of experiences of learning. References were made to the depth, breadth and structure of understanding (Entwistle, 1995; Entwistle & Entwistle, 1991; Entwistle & Marton, 1994) and the notion of a two dimensional outcome space (Marton et al., 1997). In Chapter 3, I argued that the nature of these dimensions differed from the vertical (longitudinal) dimensions that I explored above. In what follows, I compare these notions of dimension with those of depth, space and temporality and propose that we might characterise the phenomenal field in terms of three overarching dimensions. This shift from a focus on the substance of the vertical dimensions, to depth, breadth and structure signals a change from a second order perspective that focused directly on students' experiences, to a first order perspective.

**A Depth Dimension and the Notion of Phenomenal Field**

In Chapter 3 (p. 115), I outlined Marton et al's (1997) depth dimension that comprised the subject (agency), act (the way in which learning takes place), object of learning (what is learned) and learning as a whole. These four distinct but complementary aspects of learning were used to portray different layers of the depth dimension. For example, the object of learning ranged from a focus on the words of the text, to the meaning of the text, to the phenomenon (Marton et al., 1997). I was aware of these aspects in analysis and references are made to agency, act and object in Chapters 5-8. However, they were not the focus of my attention and their relation with Marton and Booth's (1997) what/how framework is unclear. Preference was given to the latter because it facilitated the adoption of a second order perspective. Moreover, the dimensions of the phenomenal field of learning that were outlined above provide a different and alternative view of a possible depth dimension. Nevertheless, observation of any one of the tables of the vertical (longitudinal) dimensions of learning provides some illumination of changes in agency, act and object of learning.

**A Spatial or Breadth Dimension?**

In what follows, I discuss the possibility of a spatial or breadth dimension. In Chapter 3, I provided a brief historical outline of different conceptualisations of horizontal and vertical views of outcome spaces in phenomenographic research.
refer particularly to the descriptions of the referential aspects and structural relations of knowledge in Table 9.3 to illustrate this idea.

As I worked through the data I became repeatedly and increasingly aware that the learners' particular spatial focus could be related to a particular phenomenal space. That is, when they made certain aspects of experience figural, what they focused upon made it possible to place their experience in the phenomenal field. In *Learning as Gaining Knowledge* (A1) and *Learning as Reproducing* (A2) the learners' focus tended to be indiscriminate. That is, they darted around, focusing first on one aspect of experience and then another in a way that resembled Säljö's (1982) "flat" conception—nothing received more emphasis than anything else and I found the focus of our conversation in the interview difficult to maintain.

In *Learning as Remembering How* (B1), the focus changed to the sequence or structure. In each of these experiences there was a sense that for students the *meaning* of the knowledge was constituted in the way it was arranged. In *Learning as Knowing Why* (B2) there is evidence of a shift to a focus on what, for want of a better description, I have called the perimeters (though nonetheless important aspects) of the knowledge—the history, relevance, cause and effect etc. In *Learning as Understanding Where* (B3) we see a further change to an emphasis of the context. Thus the parameters of the knowledge are becoming wider and at the same time more discernable. It is not until we reach *Understanding as Relating* (C1) that there is evidence of a focus on the core or significant meaning of the phenomenon itself. In *Learning as Understanding the Whole* (C2) we see this focus become more refined and competent with the discrimination of the whole/part/whole structures. In transformative experiences learners change their focus at will and with skill according to the context of the discussion.

This phenomenon of space or breadth is difficult to describe, not because the data were illusive but because I continue to be unclear what it is that is being observed. Yet, this idea of focus appears to be a key issue in learning. Indeed, as a tertiary educator, I am made repeatedly aware of the difficulty of influencing this aspect of learning. In previous studies there has been reference to a somewhat similar phenomenon. For example, in Chapter 3, I referred to the notions of vertical and horizontal distribution of attention (Säljö, 1975). Later, Säljö (1982) characterised learners' experiences of text in terms of *flat* conceptions which he interpreted as a "distortion of the figure-ground pattern" or "horizontalisation" (p. 165). Horizontalisation was "the process through which the reader gives the vertical dimension an axial turn, representing different levels of depth in the text in terms of
serial ordering" (Marton & Säljö, 1979, in Säljö, 1981, p. 61). In this description of the phenomenon, it is evident that Säljö adopts a first order perspective, in that he interprets the learners' experiences from his own understanding of the text. Marton et al's (1997) description of a depth dimension also captured something akin to the observations I made above, in their elaboration of the object of learning: words of the text; the meaning of the text; and the phenomenon. This aspect of the phenomenal field may have significant pedagogical implications and requires further exploration.

The Temporal Dimension–A Case of the Disappearing Phenomenon?

In Chapters 5-8, I made several references to the temporality of experiences of learning. Indeed, in my description of the phenomenal field I set out to use Marton et al's (1997) temporal dimension. In Reproductive Experiences of Learning (A1-A2), and Learning as Relating (B1-3) the temporal nature of students' experiences as: acquiring, knowing, and making use of were clearly discerned in the data. However, in later experiences of constructing and transforming these temporal aspects of learning disappeared from view. It was as if the acts of acquiring, knowing, and making use of became so coherently integrated with each other that they were no longer temporally separable. This notion makes sense if we see the development of learning in terms of increasing competence and integration. However, there was something in the data that pointed to a notion of temporality that differs from that of Marton et al. (1997).

In Learning as Gaining Knowledge (A1), learners tended not to refer to anything beyond the experience of absorbing. There was no temporal framework to the experience and anything beyond the immediate acquisition of knowledge was suspended. However, in Learning as Reproducing (A2) and Learning as Remembering How (B1), the temporal focus was relatively immediate. One learns and reproduces. In Learning as Knowing Why (B2) the temporal focus appears to extend into the future and the past. The parameters of learning widen to embrace application to prior knowledge and future use. In later experiences this notion of temporality becomes more and more socially and contextually inclusive.

It is possible that these dimensions of breadth or space, and temporality are correlated with each other. For example, in Chapters 5-8 we see a direct relationship between changes in the temporal parameters of experiences and those that relate to space or breadth. These brief forays into the depth, breadth and temporality of experiences of learning are tantalising. There are indications that they hold
important implications for the development of learners' experiences. As such they are potential topics for future research.

**An Explanatory Ontology of the Phenomenal Field**

The main thrust of this thesis has been concerned with the substance of Marton and Booth's (1997) question: "How do we develop knowledge about the world?" (p. 6) where development focuses on experience of learning and knowing. This question and my subsequent qualification moved the focus of the study away from that of traditional phenomenographic research and of research on epistemic beliefs.

In the thesis I argued that previous research on epistemic beliefs, and some of that which is concerned with experiences of learning, was at best only able to provide ontological description. I also argued that such description fails to capture significant characteristics of learners' experiences. For example, it focuses on the meaning of experiences of phenomena but is unable to provide an elaboration of the underlying understanding and logic (e.g., Smedslund, 1970) or the what and the how (e.g., Marton & Booth, 1997) inherent in the experience. Nor does it capture the reciprocity of effect of whole/part/whole relations (Gadamer, 1989) or internal relatedness of phenomena that is an essential aspect of experience. In consequence it is unable to reveal the transformative or developmental nature of experience as Gadamer described it. Yet it is characteristics of this kind that will transform our thinking about teaching and learning and enhance our knowledge of the students that we teach. Thus I explored a means to explain the development of adult experiences of learning and knowing. The outcome is a reconceptualisation of the traditional phenomenographic approach to take account of development of experiences of learning and knowing. In the later chapters I attempted to enact the theory in practice. Despite my reliance on many of the premises of phenomenography, I have shown in the previous chapters how the research reported in this thesis differs in significant ways from that research, and from research that is concerned with epistemic beliefs. Nevertheless, my research also builds on and extends the contribution to knowledge of these perspectives.

The thesis is based on the notion of ontological explanation that takes account of the wholeness of the phenomenon under study—hence the elaboration of learning as a composite of inter-related phenomena that constitute a phenomenal field. The idea of ontological explanation also comprises an essential aspect of my interpretation of Eisner's (1991) communicative honesty, and Kvale's (1996) notion of craftsmanship as verification. Marton and Booth's (1997) structure of experience derives from a large body of empirical research that spreads over three decades.

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Thus, it provides a means of capturing an explanatory ontology that is validly grounded in experiences of learning. Yet, on its own it will not capture the integral relatedness of the phenomena that make up the phenomenal field. Exploration of the what and how of experience must be accompanied in analysis by an interrogatory why that foregrounds the logic of internal relatedness. The outcome of this approach is evident in the later chapters of the thesis.

I emphasised that ontological explanation requires the inclusion of the knower in the knowing relation (p. 100). Polkinghorne (1989), too, has asserted that an elaboration of epistemic knowing requires a focus on the human being as knower rather than on knowledge as an abstracted study. I argued that phenomenographic analysis focuses on the meaning and structure of experience but tends to strip the individual from that experience at a within-individual level of analysis. Thus, the focus is on a form of decontextualised knowing—what is known and how it is known—and the knower is discarded. Likewise, but from a different standpoint, research on epistemic beliefs (e.g., Baxter Magolda, 1992; Belenky et al., 1986; Perry, 1970) focuses predominantly on the knower's experiences of knowledge and knowing, yet in general, its outcomes provide description of the forms and structures of knowing, rather than the ontological meaning of the experience of the knower. From an experiential perspective, I suggested that one of the reasons for this slippage was a neglect of the content of knowing.

In this study, I refocused the phenomenographic concern with the relation between knower and known, to that which takes account of knower and known in knowing relation. Like phenomenography and Gadamer's hermeneutics, this practice allows the subject/object dualism of conventional qualitative analysis to be transcended. In phenomenography the transcendence is of short duration. In the hermeneutic iteration between whole and parts that is a characteristic of the mutuality of the mode of knowing (Chapter 3, p. 100) it may be maintained. Such transcendence comprises an essential ingredient of an approach that takes account of the knower in the knowing relation. Accordingly, I used Gadamer's (1989) notion of reciprocity of effect of whole and parts in his interpretation of the hermeneutic circle, to treat the individual's experiences wholistically in analysis. The effect of this procedure is to maintain the relationship between knower and known during analysis even though the data are pooled during the categorisation process. Yet, through the greater use of individual case studies, this relationship between knower and known could have been further explored. This is an issue for future research.
In my focus on development, I argued that most of the research that addresses the development of thinking assumes Piagetian notions of assimilation and accommodation to account for changes from stage to stage. Thus, what is accounted for is not the constructive processes that are involved in the morphing of experience but the structure or framework of development that is the outcome of such change. Phenomenography captures qualitative differences in experience, but it is only able to describe qualitative change in experience that is the outcome of a more dramatic accommodative change in relation between knower and known. In contrast, the use of an explanatory ontology was able to account for qualitative differences and the slow and steady assimilative change. Yet, in these data there was a sense of something more. The overall patterns of change that I referred to earlier in the chapter and the more specific shifts between referent and structure appear to be linked, though the nature of the link is unclear. As I worked with the data I got fleeting glimpses—the ghosting of layers of further spiralling patterns.

At the macro-level, I adopted a multi-dimensional approach to provide the overarching framework for a conceptualisation the phenomenal field. The earlier part of this chapter shows that the dimensions that derive from this study are strongly internally related and derive directly from the learners' experiences of learning and knowing. There is value in this approach. For example, in quantitative research it is likely that such dimensions would be collapsed into a single 'latent' dimension. Yet, were this to happen, much of the descriptive detail of the phenomenal field would be lost. More importantly, the information needed to formulate the ontological explanations would also be lost. In short, despite the fact that the vertical (longitudinal) dimensions are strongly internally related, they cannot be collapsed into one composite dimension. Thus, the thesis challenges the notion of experiences of learning as a uni-dimensional phenomenon and argues that there is more flexibility and veracity in thinking of learning as a multi-dimensional phenomenal field.

The journey thus far has been exciting but rather long and arduous. It suggests that research has only tapped the surface of the meaning of and relations between the phenomena that make up the phenomenal field of learning and knowing. It has also raised more questions than answers. Most significantly, the progress of the journey has reminded me over, and over again of the importance of focusing on the other's experience and looking at it from their point of view. It is this concern for the knower, more than any other single thing, will take our journey further.
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APPENDICES
Appendix 1: Interview Schedules (1991-1993)

1. Now let us start with a general question. What would you say 'higher education' means in general? What do the words 'higher education' mean for you? How do you see it? Why did you choose to do it?

2. Think back to the time when you were making a decision about what you wanted to study. What was it about University A (University B) that made you want to come here? What is it about the Programme? Course? place?

   (For University A students - were you eligible to enrol at University B?)

3. What is it like to be a student at University A (University B) this year?

4. What stands out for you about the Psychology Programme (the courses) so far? What? What does that mean? How? How does that relate to your learning?

5. Can you tell me about something you have learned recently? What? How? How do you see that? What does that mean?

6. Could you give me another example? What? how?

7. What would you say 'learning' means in general? Could you say a bit more about that? What does that mean? How did you see that? etc.

8. The example you gave me was from your study in the Programme, (learning outside the University setting). Could you tell me of another instance of learning outside the university setting? (from your study in the programme?) What? how?

9. You have told me what you think learning means in general. Now learning, or different aspects of learning have been an area of content that you have studied in the programme (course). Can you tell me a bit about that? What? How?

10. Do you think maybe there is a difference between what you have learned about learning in the Psychology Programme, (courses) and what you think about learning? What? how?

11. Can you tell me about something you have understood? What? how?

12. What would you say understanding means in general? What? how?
13. How do learning and understanding compare?

15. What about memorising, how does that compare with understanding?

16. Is it possible to memorise and understand something at the same time? How can that be done? or Why not?

17. Is meaning something important when studying, for instance, when you are reading or writing?

18. What is meaning? How does it compare with knowledge? What is knowledge?

19. How does teaching relate to learning? Does teaching always lead to learning? What does it take for this to happen?

In 1992 and 1993 the schedule was adjusted to account for the fact that students were engaged in their second and third years of study. In 1993 the schedule was extended to include questions about students' plans for their careers and future study. For example they were asked if they thought that their study had prepared them for the career of their choice. The data that derived from these questions was not the focus of the current research.
Appendix 2: A Sample of the Data (Peter, 1991)

The following transcript was generated in an interview with Peter in his first year of study at University A. The transcript has been "cleaned" to remove any personal information that may identify either Peter, or his friends, or the University. Peter's experience of learning provides an exemplar of Learning as Relating, Understanding Where. His principal focus is to apply knowledge with understanding and to seek further situations where what he has learned can be applied. (I and S represent me (as interviewer) and Peter respectively.)

I1 ...can you tell me a little bit about when you left school, what you've done since?

S1 OK um I left school in '86, no '87 and I've done a three year course at um xxxx College of Art. I did a BA in fine art there. Um I finished that and a lot of my, I majored in painting and minored in uh drawing and in a little bit of sculpture. And a lot of my work was centred around body language, human movement and um eastern philosophy, and I've sort of wanted to learn more about that and um I decided to do behavioural science, so yeah.

I2 OK, um did you leave school at year 12?

S2 Yeah.

I3 Right. Um, was, was there some, was this in addition to your art work, or was there some dissatisfaction? Like what were the, what was the basis of the change? It's an unusual change.

S3 Well at the time it didn't seem all that unusual to me. It was a progression of ideas. I was very interested in um understanding people and um what with the philosophy and body language, and human movement etc. So it seemed like a pretty um straight forward carry on with ideas and at the time I was going to apply a lot of it to my work as a painter. And um that's sort of fallen by the wayside. I've become more and more interested in um the ideas that being um I've come in contact with here.

I4 OK I'm going to probably come back to that in a little bit. What would you say in general higher education was, is?

S4 Higher education is, um, I don't know um school I guess, um with, then I went to xxxCA that was very unstructured and the onus was very much on you. You had to learn, you weren't being taught and I found that really good.

I5 So are you saying that higher education is having the onus on you and?
Oh yeah definitely. Like it's up to you, it's, you're learning things, you're not, like at school you're being taught things, you're having the information given to you and it's just up to you to process it. Whereas when you're um learning you've got um, you have to, you're given the raw facts and you have to find out more about this and what parts interest you and gather information yourself and then you process it. So there's a lot more um things that you have to do which I find it a lot more enjoyable.

So you take control?

Yeah.

Did you do uh, you've, to some extent I suspect you've answered this question but I'd quite like to check that out. What was the reason for you um undertaking higher education? Say this program?

This program?

You've given me some answer.

Well as I said, to gain more knowledge about what I was interested in. Um, to gain a greater opportunity to acquire a job and um I guess to learn. I guess I'm the type of person if I had the money I'd be continuously studying.

Right. So the job wasn't the prime factor?

No.

No um, OK you're practicing art continually, you're going on with that?

Yeah.

Yes, right. When you were looking at what you were going to do this year, after your art program, uh what made you come to University A? What was it about the University that made you?

Um well I've had a couple of friends who have been here and I've come up occasionally to use the library etc. And um I find the atmosphere is a lot um less clutter, it's not as cluttered at University B and it's very friendly and open. Like you feel, like I immediately felt at home here after xxxCA etc was. Whereas the times I've been over to University B it's very formalised and structured and that's something I hate.

Are you talking about xxxx or are you looking at University B?

University B.

Right. So you see that as far more formal? Could you have gone there if you'd wanted to?
Um, as in my um results?

Yes.

Oh yeah, no worries. I had a fairly high TE score and my passing and getting credits through um college boosted it up. I would of been able to get in no worries.

Right. When you say you knew this campus, so it was the campus more than the program?

Oh no, I wouldn't say that. Um I've had a bit of feedback about the program before I started and um from what I heard I liked it. University B was very um, not, wasn't based on learning as, like most of its other courses it's very structured and you, it's more along the lines of um. I can't think of the word I'm after. Um (pause) it's not, it wasn't practical, as practical.

Right, it was more theoretical you're saying?

Yes, a lot more theory. And um, whereas this course, it's um there's theory, a lot of theory involved but it can be practically applied and uh that's what interested me as well.

Right. When you say you knew, you knew something about, oh well, something about the program struck you, what, that was the practicality of it, rather than the?

Yeah, and um a general idea of what was involved in the program, a very general idea.

Um the design of the program with the work and health and psychology components with um. Were you aware of the work and health?

I was vaguely aware of the, I knew there was a section on it and um I knew there was um, it could be applied to industrial relations etc. And um I could see how that sort of worked in with psychology so that didn't worry me all that much. But the main reason was that I wanted to do uh psychology.

Hm, and you still want to?

Yes.

OK, has the program lived up to your expectations this year?

Um, I think it's gone beyond them actually. I've been really um happy with what I've seen. Like everybody seems very willing, well almost everyone seems very willing to um go out of their way, well everyone seems very willing to out of their way but some people are more approachable than others. That's a better way to put it.

You're talking about the staff teaching team or the students too?

Um, the students and the staff. The entire group of people I'm interacting with, coming in contact with.
Had you expected that or?

Um, yeah I think so. I didn't expect it as much from the staff. But I think that's partly because um well I came in contact with it at the College of Art, everyone's very open easy to approach etc.

It was a fairly similar environment to some extent anyway?

To some extent yes.

OK, um right, we've almost moved into the next question anyway. What has it been like to be a student this year?

Elaborate.

Yes!

Um, it's been enjoyable. Um it's opened my eyes about a lot of other concepts that um I hadn't, not thought of, but paid attention to um previously. And um it's been very interesting.

So that's um, looking at the program itself and the content of the program?

Content, etc.

Yes. You said a little bit about um the class, the students and the fact that everyone has been helpful about things. Could you say a bit more about how you see the class relating to each other?

Um well everyone's very, well most people are very outgoing and if they weren't before they've definitely turned that way. Everyone's sort of had an effect on everyone else. They've started to open up and talk more and you get a lot better communication than what I think would be available in most other institutions.

What were the factors though, d'you think?

Um partly because of the University environment. Um the teaching staff here and um definitely, well the teaching staff ..... definitely had a huge influence like he has, he has this um ability to get everyone working and start getting the group interacting which is very good. So um you see people break up into smaller groups but they don't adhere to those groups as um strictly as what you'd find in other places. They sort of, they're really willing to meld to form a larger one, interact as that large group.

Right, right. Um OK, how, has anything stood out for you about the program this year? Again you may have mentioned it already.

Stood out? Um, well as I've said the, the way the teaching team have been, the team and um.
You mentioned some, it opened you eyes, concepts, it opened your eyes. Could you say a bit more about that?

Oh, um let's see. Well it was at the College I was very broad-minded there and uh I think it's expanded, more self developed, as more information, as I've learnt more here. Yeah I've sort of um filed it away as something else to relate to and it opens up a little bit more of the world. Like you can um understand a bit more, and um gain a little bit more knowledge about things from applying what I know to various things.

Right, right. To take that a tiny bit further could you focus on something that you've learned this year and tell me about that?

Um let's see. Well when we were talking about um neural processes and um the various um, oh God... Pathways?

...the pathways and the um oh acetylcholine, those sort of things.

Could you tell me, could you focus on it, and tell me in more detail?

Well one of my um, a friend of mine, he suffers from um something very akin to xxxxxxx. And when I was learning more about this like I'd, I understood it before and I could apply some knowledge to what I was learning at the, with the course. But as I gained more and more knowledge from the course, there was uh, it opened up a lot more what I'd already experienced and I was able to. I did further reading, I was encouraged to do further reading by a couple of the tutors and um I understand my friend a lot better and um understand the mind a bit better for that experience and what I've been learning.

So you yourself undertook further study on that topic?

Yeah.

Could you tell me what it was you actually learned? I mean, say in terms of, you said it showed you a lot more about your friend.

In terms of, um let's see. He's um been going to a psychiatrist and um he was telling me about one of his um interviews with him, one of the counsellors. And um he was saying what the psychiatrist was saying and um how you've just got an imbalance such and such, here take these, this should help and if it doesn't, um tell me, get in contact with me and explain what's going on etc. And he was telling me about this and um then he started um saying what he's been feeling and he was talking to me about that. And I felt I could sort of, I understood what he was talking about. Like, well not understand but have an empathy towards what he was saying and um I could apply it. Um so he asked me well what do you think? You're doing psychology etc ahh, um I sort of went, I don't know enough. But as I was talking to him, like he was talking about various neuro-transmitters and um what's going on and just the little bit of what I'd been learning. And he said, oh right, well nobody's told me that so that could have
something to do with it. And I said yeah. And he was really happy like the um psychiatrist hadn't taken the time to explain what was going on or what could be going on and um I'd helped. Like he didn't understand himself, like he only knew he was having these, hearing voices and his really abrupt changes in personality, like one minute really placid like he usually is and then next he was very aggressive and um abusing no one in particular, like just the world in general. And he sort of oh OK and sort of grasped what was going on a little bit better.

OK So what did you learn from that? (Laughter)

(Laughter) Um, a little bit of um the way to go about counselling I guess. A little um, how to not, I know how to listen etc but I'm developing it, developing how to put across you know I'm friendly you can talk to me, I'm willing to listen, if I can I'll try and help. And it gave me a chance to sort of not so much play psychologist but um just to listen, um developing certain communication skills and um sort of putting order to things I have learnt and being able to apply them. Like focus on various things pull them out of little filing cabinet and apply what I knew.

OK. Could you give me another example or tell me about something else you have learned in the program? It doesn't have to be in the program.

Mm, something else I learned. Organisational groups etc.

Hm, can you tell me about that?

Well the way groups interact. You have various um types of groups as in um chain of command, they're high, high interpersonal groups or other groups that sort of thrust upon them. The members are sort of thrust upon each other and not very cohesive, and cohesive groups and non cohesive groups and um various things that um form, help make these groups more cohesive. And how um a cohesive group can either work very well or um not very well depending on the environment they're in. Whereas a non cohesive group will be spread out a lot more and you'll have members working a lot better than other members, and members working a lot worse. Um, various things that occur in groups like um group think and um how you're more inclined to, groups are more inclined to either make very um radical decisions or um very conservative decisions. Instead of just middle of the road um they're inclined to go more one way or the other.

Right, what, what would be the significance of that learning for you?

Um, if I was um acting as a counsellor or something, being about to understand the process with the group I'm working with. Understand what's going on in that group. Um being able to generate uh talk and discussion within the group. Um becoming more efficient I guess as counselling groups.

You said, if I was. Have you, have you seen any, has there been any situation where you can have applied some of that or not?
Oh I guess any time you become a part of a group you can apply the, um just sitting outside in the coffee lounge and you're talking you can sort of watch and see what is going on.

Are you conscious of doing that?

Um, sometimes I make a conscious effort if there's something that catches my eye and I think oh yeah I can apply that and sort of make a conscious effort of trying to figure out what's going on. But other times I find I'm doing it unconsciously now and um I guess that means it's becoming more engrained, which is good.

You've given me two examples of, of um learning in the program. What would you say learning is in general?

Learning. Well I've already said there's a marked difference between learning and being taught. Um learning is um gaining knowledge and uh being able to um process it and um store it in a way so you can use it later, at a later date.

Um, when you say process it. What, what d'you mean by that process? What does that process for you?

Process. Well um remembering it for starters, remembering it. Um, then being able to see what where it applies, where it is applicable to as in other knowledge you have, other learning you have and um being able to, not so much categorise it but um see what it is associated with and then being able to store it, remember it and bring it out of your memory and apply it to a certain situation you find your self in.

Right, when you say um, there're a number of things you said actually. Words like associate, relate, apply. Um, I may have added a couple there but uh are you conscious of doing that when you're wanting to learn something. Is there some way you go about that?

Um, I don't think anyone can be wholly conscious of what processes go on but um you have to, there is an effort to do it because if you make the effort to um like associate things together then you're more likely to remember them. Well I find I'm more likely to remember them.

Say, you were at the lecture this morning on?

Um, yeah, yeah.

Right.

Most of it.

Yes of course you were because you told me I didn't ask for xxxx. Um, for instance sitting in that lecture um when you were, when the information was coming, the knowledge, um were you conscious of any particular thing you were doing with that?
No not really. I was recording, writing down key points and um I guess I was thinking of, yeah I was thinking where they tie in with things we've been taught, work before etc. That's about it.

OK um, in the program certain areas, certain topics are associated with learning rather, are learning, some of the content areas are about learning itself in the same way that some of the content areas are about groups or ANOVA or Chi squared or whatever. Uh can you recall or tell me about uh any particular areas you've seen about learning in particular?

Um, oh God.

Take your time.

Yeah well you got um, um all your behavioural approaches um, operant conditioning etc, classical conditioning, the other psycho-dynamic approaches, um the dispositional and um the other approaches. All those things you can um apply to behaviour, you can apply to um the way people learn as well. Then you've got um Skinner etc, classical, operant and um the other forms of learning processes that there are. And the way they um, they all influence, they have different ideas that they all um well I see different aspects where they inter-relate and um, let's see.

My next question is, you've told me what you think about learning and what you believe learning is. D'you see any kind of similarity or difference between what you've learned about learning in the program and what you think about learning?

Um, from what I've seen so far I think the ideas I've taken in to this course about learning um associate, no, meld fairly well with the ideas that have been presented here. Um, the way the course has been structured you know, it is up to us to learn um and some of the approaches I've learnt they do um, um stand up to my ideas.

D'you think there is a modeling going on of what they're teaching?

Yes definitely.

OK. Um, you talked about, well you mentioned understanding I think um. Could you give me an example of something you think you've understood, you're aware you've understood?

Of this course?

Hm.

Um, let's see. Lewin's force field analysis. We were taught that in week 5 or 6 by ...... Um she was, she went through that and I sort of grasped the concept fairly well. I understood what she was talking about um. Would you like me to go into?

Yes.
Um, well you've got two, you um I can't think of the proper word, you, qualitative problem, like pull it apart and view all its various aspects of the problem and you set up a um little table basically. One side's got driving forces and the other side uh restraining forces and you put your um problems that you have, various aspects on either and see how they weigh against one another and you um begin to work on um the restraining forces. Because if you build up the um driving forces then the restraining force is going to build up as well to equal out. So you work on the restraining forces and um eg if somebody is a restraining force you talk to them and um find out what's going on and try, if they fail to understand what's going on, then you help them to understand what is going on if that's the problem. And um then you synthesise the problem back together, synthesis the situation back together until you come up with a coherent whole and Lewin's force field analysis helps you to achieve that coherent whole.

Right, so um, and you've told me what that is. Um, um what, for instance, again was the significance of that for you?

Um, the significance of it. It could be applied to people. Um I guess I'm a fairly social person and I interact a lot with other people. So since I've found that, that a lot of interaction is in group form then it's a way to apply something I've learnt here to group form, to how groups interact and um if, like um help if there is something wrong within a group or um. I guess it's um doesn't um apply directly to what I'm, I'm doing at the moment but it's something that interested me. It caught my imagination and I thought of possible uses for it and that and um so it sort of stuck in my mind very clearly.

When you said it uh it interested you, it caught your imagination um, what?

I thought that was going to be picked up on. (Laughter)

(Laughter) I see I'm predictable. Oh is that um, d'you often associate those things with understanding?

Um, I think you have to have some sort of imagination to be able to understand things and the way they relate with what's around you. Otherwise you're going to end up a very closed um approach and view of life and things around you if you don't have an imagination.

Could you, could you, I. Could you tell me how you think imagination plays a part there? The reason I'm, we're going off in a slightly different direction from this, but you're the only student who has ever mentioned imagination (laughter) and understanding. And my guess is it's to do with your art.

Yeah.

So could we just explore that for a short while?

OK um let's see. Well in understanding something you have to, um well as I said apply it to various things. And if you have um, if you're structured, sort of structured sort of personality or whatever, then you're going to um, well convergent thinker, you're going
to um have certain ideas on where that's applied and you, and you will not um think of anything where it could be applied usefully outside those set constraints. And if you use your imagination then you're going to um be able, it's going to form a different perspective on ways to handle other situations. And like it might not be helpful but it might also, so it's useful to um sort of diverge away from what is generally accepted. And, just be able to have something else to fall back on, something else to apply. And imagination is sort of like being able to delve into what you know and think oh that could be, like it may not um be thought of there but I could do such and such and if I did such and such then it might work and um that's sort of, I guess diverged away from what's generally thought of, or what.

I60 Right, when you, when you are studying, learning are you often aware of finding yourself looking at it slightly differently in that way?

S60 Yeah.

I61 It sounds like it's more?

(End of tape)

S61 Um to experiment with everything. Don't be satisfied with what you've got, try something new. And um because you always find something new and different that will work for you. And um, so I guess what, when I'm studying something or just trying to um understand or just looking at something I can um see different possibilities for it. I can um, one of the problems we had in the tutorial, the um divergent thinking one, the different uses for a button. Yeah, and everyone is thinking like markers for board games and just sew on a shirt or something, as far a I know I was the only one who came up with using it as a projectile for a sling shot or something. (Laughter)

I62 Right. (Laughter)

S62 Like um there's so many different ways of looking at the world and if you want to understand and learn more then you're going to have to experiment with the way you look at it and the way you apply things to it. And I think that's very important if you want to get more out of whatever it is you're doing.

I63 OK um, (pause) um, I want to explore that but I think I'm going to have to come to this. I may take it up another time. We'll see. Um, we, we've been talking about understanding and I'm, having gone away from this, I'm not sure. Have I asked you to tell me what you think understanding is?

S63 Um I think so yes

I64 Yes, yes, we. (Laughter)

S64 (Laughter) I think that's how we got into the imagination part.

I65 That's where we got into that. Yes, imagination yes. How d'you see learning and understanding? I mean in what relation?
Um, let's see. When you're taught something you're um, you're, there's less, there's a greater chance of not understanding what you're being taught. Because you're not going at your own pace. You're not um being, you're just having the facts presented. There they are, that's them, learn them. Good! But if you're learning, being asked to learn things, then having the facts presented, then you're going to have to um go through and um fit them in with, not so much fit them in, look at them and analyse them, like look really hard and pull them apart and see how they interact with each other and what you know and as you gain more and more knowledge of what they're capable of doing then you're beginning to develop an understanding of them.

Right so that's that process you were talking about earlier, when you were talking about learning and so it was almost um one runs into the other I'm hearing you saying?

Yes.

Yes.

Um I guess I'm getting a lot of this from philosophy. Um there's, they meld, you don't have one thing sort of that's it there and that's it there. They join, they have, they have, everything has to inter-relate for you to gain...

Right, OK, I was presenting with a linear model and I see what you're saying.

Um, memorising. I guess that's the final process where you um, once you've understood it and learnt it, then you, it's um your ability to store information until you need it at a later date.

Um, are you talking about some conscious process or?

Um, it's both. You um it's, well you're making a conscious effort sometimes and other times um you're not making a conscious effort. You're just, it's been said and you just remember it. It just slips in and it's locked in there. I seem to be doing that. I seem to do that fairly often. I don't have to make a great conscious effort to remember things.

What about say preparation for exams or something like that?

Um, up until second semester I would have said what preparation? Um, I sort of, I might read through a book or my notes and that's it. But um I go fairly well.

So first semester that's what you were doing?

And this semester basically until I got my results back from work and health. (Laughter) I decided I think I might actually do something, do some study this time.

So up until then it hadn't been too bad a result?
S73  No.
I74  What grades were you getting?
S74  Um, let's see. The lowest I got was um 63%.
I75  So that's a pass?
S75  I just missed out on a credit
I76  It's not quite a credit is that right?
S76  Yeah.
I77  And that was last semester?
S77  Yeah.
I78  And the work and health had you not done so well with?
S78  Yeah this last exam...
I79  Sociology?
S79  Yeah, I got um 15%. Which I was not happy about at all. No, 15 out of 30, so that's 50%, which I wasn't very happy about at all. But, I sort of expected it because I didn't completely grasp what was um going on so that's. I should have made an effort because I realised that. But I sort of stuck with what I was used to doing.
I80  Are you, are you, you found, you talked about association. You found that kind of whole process has worked for you well until now, have you?
S80  Yeah.
I81  Right.
S81  Very well so far. (Laughter)
I82  (Laughter) Yes, right. Um right um, what, one of the questions here again that I think we've probably covered, covered it to a large extent but uh where did meaning fit into your your ideas about learning and understanding?
S82  Meaning?
I83  Meaning when you're studying and reading.
S83  Well you have to have some idea of the meaning of things for you to be able to understand them. If you don't grasp the meaning of what's going on around you then you're not going to be able to understand it at all.
I84  Right. So what is meaning then for you?
Um I guess it's a way or a path to understand things.

That tells me more of the process.

Yes.

But can you say what you think it might be?

What it might be. It's a difficult word to, um let's see.

If something has meaning for you?

Well it holds some sort of, it holds something for you, it holds a um, something you hold um, that is, something you hold, not dear but.

Are you talking about importance or value?

Yes. It holds a value for you. That's the word. And um you, you use that as um, incorporate that value and gain an understanding etc.

So um I'm still not quite clear what, what that might be and it might be quite hard to get any clearer. Um, if um, for instance, has there been a lecture recently that has some real meaning for you?

(Pause) I can think of what you're talking about but I can't think of a way to explain it. Like the meaning is, I've used it in conjunction with understanding but it is different from understanding as well. It's, you can understand, you can, something can hold meaning for you, hold a value or um so that it is important to you without you fully understanding what is part of it.

What about your art work? I mean is that an illustration of some of that perhaps?

Yeah definitely. Um like I've been trying to resist the resort to, well not resort but um delve into.

Isn't that part of what you're saying?

Oh yeah. It's um, my art work has a lot of meaning for myself, and it is important to myself and I understand it. But other people they understand it but it doesn't hold the same meaning for them. So I guess you can apply that as an analogy towards it. Yeah. It's um.

Your understanding and their understanding might be quite different?

Hm.

So?

And so the meanings might be quite different as well. It's up to the individual to interpret um certain aspects of things they see or view or come in contact with. And the
way they interpret it also alters the meaning and their understanding of it. It's um getting out, people getting out certain things from um something you come in contact with.

I94 That's, that's meaning?

S94 Yes.

I95 Are you saying? So understanding, in relation to that getting out, is what?

S95 Um, understanding is being able to apply that meaning again etc

I96 Right, I'm conscious we've just done that, just that process.

S96 Yes. (Laughter)

I97 Alright, um last, last question. Oh no, not quite, um where, where d'you see meaning say and knowledge fitting together?

S97 Meaning and knowledge? I think I said something about this earlier. Um, at the risk of reiterating um, meaning, you have to have some sort of um understanding, meaning, grasp the meaning of certain things, and that's the way you apply it and your understanding of it and various other factors build up into um knowledge.

I98 Yeah, OK. I'll leave it there because I think you've answered the last question.