

Chapter 1 Introduction

“In the beginning was the word” John 1:1¹

“In the beginning was the deed” Goethe, *Faust*²

“In the beginning is the relation” Martin Buber, *I and Thou*³

1.1 Statement of the Research Topic

This project explored clinical decision making. Its goal was to produce a better understanding of the nature of clinical decision making and the negotiation of meaning in the decision making process, especially as it occurs in teams. A major contention of the project was that clinical decision making should be seen as a socially constructed phenomenon that is dependent upon the interpretive repertoire provided by language. In particular, this research explored the construction of clinical decision making as conceived within the medical model, i.e. the intellectual process that clinicians engage in when they seek to arrive at a diagnosis and management plan for a patient. The project looked at groups of clinicians and students who are collectively attempting to diagnose real or realistic cases. The focus was on the language that clinicians use in these situations. A key assumption was that the analysis of language use, in context, affords a means of exploring clinical decision making. Another assumption was that cognition in such a group is best viewed as being distributed among the participants, rather than something that occurs exclusively within individuals. The research was a naturalistic study (i.e. conducted in two real-world settings of practice and problem-based learning, respectively) using data collection and analysis tools suitable for the interpretive approach being adopted.

Using a qualitative approach, the project examined in-depth the ways in which participants used language in these collective situations to negotiate meaning, manage context, and demonstrate to each other their understanding of the clinical case (real or

¹ The Jerusalem Bible (1966). London: Darton. Longman & Todd.

² Goethe, J. W. (1998). *Faust: Part I* (P. Wayne, Trans.). London: Penguin. (originally published 1808).

³ Buber, M. (1970). *I and Thou: A new translation with a prologue 'I and You' and notes* (W. Kaufman, Trans. 3rd ed.). Edinburgh: T. & T. Clark.

hypothetical). The project sought to explore how people in these clinical decision making settings communicate their reasoning and their decisions within the social groups they create, both as a means of bringing about effective clinical decision making and as a means of learning to make collective clinical decisions. The research sought to describe how participation in such scenarios acculturates novice clinicians into their professions, particularly in relation to the activity of clinical decision making and its communication.

It is my belief that such an approach can move us towards a deeper, more realistic understanding of what human beings in a health sciences team are doing when they engage in clinical decision making. This study did not examine the patient's role in clinical decision making. Nor did it seek to locate the interpretation of clinical reasoning as a social phenomenon within the critical social sciences context. That is a topic left to other research.

Clinical decision making in practice can be conceptualised and enacted as the *independent* decision making processes of an individual clinician. However, I argue in this thesis that clinical decision making is best thought of as a social phenomenon. For example, even in solo settings (where the practitioner works with the patient alone), decision making involves dialogical processes. There is, of course, a dialogue with the patient to gather information. There is also the dialogue clinicians have with themselves in order to make sense of the information gathered and reach a diagnosis. In this project the view is that thinking, even when alone, is at heart a social process that people learn to do alone. Following Billig (1996), thinking is seen essentially as the ability to argue well and has much in common with rhetoric.

Alternatively, clinical decision making could be labelled *multidisciplinary* and collective, to describe a process of team interaction and interdependence within the processes of diagnostic and management decision making. Commonly such decision making would occur in team settings such as case conferences.

Thirdly, *collaborative* clinical decision making is a term which can be used to describe collaboration between patients/clients and clinicians in determining the goals, direction and processes of health care programs, both for health promotion and illness management. This collaboration between clinicians and patients helps to shape the

naming of patients' clinical problems (ranging from the medical diagnosis to functional diagnoses and problem lists), to determine management goals and their priorities and to decide on management strategies that are mutually acceptable.

This thesis focuses on what I label as *collective* decision making, or the explicit cooperation between health professionals in group clinical decision making situations, frequently in multidisciplinary teams. In the thesis I argue that insights from such collective settings and processes can also shed light on the clinical decision making processes that health professionals use when working in solo settings. A major focus of this work is on learning the language skills of clinical decision making, based on the contention that these skills form the foundation of clinical reasoning. The choice has been made to focus on clinical decision making as a skill to be learned within the professional socialisation process, which involves not just learning to perform competently as an individual professional, but also learning to act effectively and appropriately within the cultural settings of professional health care. This broader structure of clinical reasoning lends itself to the labelling of clinical decision making as a sociocultural phenomenon.

The focus on the language of clinical decision making is particularly pertinent in this age of practice accountability. To demonstrate accountability the health professional needs not only to achieve appropriate (effective, relevant, cost-effective evidence-based) outcomes but also to be able to articulately justify the decisions made and the actions taken. The language of reasoning lies at the core of this process. To achieve this outcome it is necessary to take invisible/inaudible (thinking) processes, give them credible words and argue/explain them convincingly. The settings of this research were chosen as situations where the articulation, negotiation and justification of clinical decision making are routine activities.

1.2 Purpose and Goals of this Project

The project is significant because the majority of previous work in clinical decision making has been largely based on experimental work that has taken a reductionist, individualistic, cognitive approach to clinical decision making. The reductionist approach assumes that phenomena like clinical decision making are essentially something private and residing within the heads of individuals. It is my contention that much of this work is

limited, even in situations where a clinician is working alone, and that viewing clinical decision making as a social process can reveal more of what the phenomenon entails.

The aim of the project was to explore and analyse in depth the ways in which clinicians in teams use language when they are collectively reasoning through a case. Adopting an interpretive stance, the project explored the extent to which the language of clinical decision making demonstrates that such reasoning can essentially be considered a social phenomenon. By applying these insights to human beings engaged in this activity in natural, social, clinical circumstances, and in their full complexity, I seek to show that we can gain a much more complete and a deeper understanding of what is happening when people engage in this form of clinical decision making.

This is important for a number of reasons.

Firstly, collective multidisciplinary clinical decision making in the form of problem based learning (PBL) is rapidly becoming the keystone of modern education in a variety of health care professions. Therefore, a deeper understanding of how novices come to learn the language and interaction/negotiation of collective clinical decision making should be most useful in facilitating PBL.

Secondly, multidisciplinary team approaches are becoming more common in a number of health care settings, especially those dealing with chronic and complex clinical problems. Some people entering these team settings may not have previously learned the skills involved in publicly negotiating meaning or presenting reasoned arguments. It is of interest to see how these skills and language are used and learned in the real world of clinical team management.

The key research questions include:

- What are the linguistic conditions that permit clinical decision making to occur?
- How can language as an artefact/tool (the tool of tools) and language use in communities of practice be used to articulate and enhance understanding of the phenomenon of clinical decision making?

- What insights can be gained into the nature of the phenomenon of clinical decision making from examination of the language used by participants reflecting on collective reasoning?
- What interpretations do participants make of collective clinical decision making?
- What insights do participants gain into clinical decision making from their involvement in collective settings?
- To what extent do participants in collective clinical decision making settings believe that the skills they acquire in such settings translate to solo practice settings?
- In what practical-social ways do participants negotiate meaning, manage context, and demonstrate their understanding of the clinical case to each other? In other words, how do they demonstrate and manage intersubjectivity?

1.3 Context and Boundaries of the Project

There are a number of delimitations to the project.

1.3.1 Definition of Clinical Decision Making

It is accepted that clinical decision making can have a number of different meanings to people in different health care settings. However, in this project the term *clinical decision making* was limited largely to diagnostic reasoning within the medical model. Therefore, for the purpose of this research the term clinical decision making was restricted to the intellectual processes that clinicians undertake when confronted with the responsibility of making a diagnosis and management plan for a particular patient.

1.3.2 Collective Decision Making

A further delimitation is that the research was restricted to two settings. These were settings in which teams of clinicians or students undertook the intellectual task of clinical decision making as a group, with joint responsibility for patient care. The first setting was a multidisciplinary centre. In order to cope with difficult, chronic cases, such centres often have a policy that new patients are assessed separately by each member of a team, who then come together in a clinical meeting. The purpose of these meetings is to pool the respective expertise of different health care professionals who can bring a variety of perspectives to bear on these difficult cases, so increasing the chances of a successful

outcome. The research project focused on a clinical team of health professionals who participated in multidisciplinary pain management in a tertiary hospital setting.

Patients were not present at these meetings. The presence of patients was thought to prevent the clinicians from speaking their minds openly and frankly to each other. Patients were normally seen by the team doctor after the meeting, where the team's findings and recommendations were discussed with them.

1.3.3 Problem Based Learning

The second research setting involved medical students undertaking PBL tutorials. PBL is now a keystone of the approach to education in many health care professions. Students work through a series of realistic clinical cases as a group with the aid of a tutor. The tutorials aim to simulate clinical reality as much as possible. Students have to ask for relevant information about each case, which is gradually released by the presenter/tutor. Students are expected to justify their decisions and explain how and why they made them. Students are strongly encouraged to use a hypothetico-deductive approach. They are also encouraged to identify deficiencies in their knowledge which can then be used as an incentive to set themselves learning goals. The students in these groups are already graduates from a variety of backgrounds. Some have experience working in another health care profession, which they bring to bear on the clinical problems. This means that they tend to be heterogeneous groups, with some relevant similarities to the multidisciplinary clinical teams.

1.3.4 The Language and Social Dimensions of Clinical Decision Making

Clinical decision making can be interpreted in many ways. One way is that clinical decision making is an exercise in categorisation. Another way is that clinical decision making is an exercise in narrative construction (Greenhalgh, 1999). In the former, a patient begins by being in the category of "person with a medical problem", such as having a "pain in the mouth". The diagnostic process involves refining this categorisation so that the patient becomes someone with a definitive diagnosis, for example "person with impacted wisdom teeth". Vygotsky (1986) pointed out that all human perception consists of categorised rather than isolated perceptions. We interpret our perceptions within categories in order to give these perceptions sense and meaning. Diagnosis, in this

sense, is the practice of professional categorisation according to medical criteria. This ability requires the internalisation of norms accepted by the profession. As Wenger (1998) pointed out it also involves the further step of constructing a professional identity within a community of practice. A health care profession can be regarded as a community of practice, in which certain norms are considered acceptable. Membership requires newcomers to demonstrate competence in using these norms. In the case of categorisation, a new member must demonstrate mastery of categorisation skills and the ability to categorise accurately according to the norms and practices of the professional community.

Fundamental to all this is mastery of the appropriate language. Members of a community of practice are expected to use language in certain ways. This means they will talk to each other (and their patients) in ways that fit within the norms laid down by the profession. Where negotiation between health care professionals is required appropriate use of acceptable language, underlying the accepted norms, is expected. This is probably one reason why the "mainstream" health care professions are often in dispute with "alternative" health care professions. The accepted norms and appropriate language are radically different, even when they sound similar. This project focused on the ways in which language was used by health care professionals from medicine, dentistry, clinical psychology and physiotherapy.

1.4 Key Dimensions of the Theoretical Framework for the Thesis

1.4.1 Language and interaction

There is a common view that language is representational. This has been the position in traditional linguistics which has analysed language and speech as disembodied abstractions, i.e. as an encapsulated formal system. However, there is an alternative view that if we wish to understand language we must see it essentially as expressive and context-bound. This alternative view has sometimes been described as the "linguistic turn" in the human sciences (Lee, 1998). This view does not deny the representational aspect of language, but regards it as a secondary function. Theorists who espouse this point of view maintain that knowledge and language are intimately related, and that language is best studied as an interactive phenomenon in which the analysis of context is crucial. There is a growing body of research that assumes that language in the form of

talk both invokes context and provides context (Duranti & Goodwin, 1992). For example, there is empirical research that supports the notion that the process through which humans learn to speak needs to be conceptualised as a profound process of language socialisation. To think of this process as merely language acquisition is to oversimplify what is happening (Ochs, 1983, 1986, 1988; Ochs & Schieffelin, 1984; Schieffelin & Ochs, 1986).

Over the years, a growing number of researchers from different disciplines have become convinced that representation is a secondary function of language. In anthropology, as long ago as 1923, Malinowski asserted that in its primitive uses, language functions as a link in concerted human activity, as a piece of human behaviour. It is a mode of action and not an instrument of reflection. The reference to *primitive* was eventually dropped, and this function was seen as a general property of language. This fundamental idea has been taken up by others in various ways. McDermott (1993) built on this idea when he pointed out that language is not a neutral medium; it comes to us loaded with social structure. Language comes to us loaded with sensitivities to the circumstances under which it was born and maintained in previous encounters.

1.4.2 The place of Context

Central to the phenomena being investigated is the idea of context. Cole (1996) pointed out the Latin root *contexere* means "to weave together". Context should be visualised not as merely an inert container, but rather as the dynamic, ever-changing relationship between the activities being foregrounded and the sociocultural circumstances and artefacts that frame them. A useful metaphor that regularly appears in discussion of context is that of weaving. A rope or a carpet needs to be seen as a whole with several elements intricately woven together. The metaphor goes back to Goethe's *Faust* (1998) in which Mephistopheles uses the metaphor to describe the difference between the reductionism that seeks ultimate first causes and an approach to science that seeks to combine different perspectives on human activity. Birdwhistell (cited in McDermott, 1980 pp. 14-15) used the metaphor to provide an image of what is intended by this notion of context.

I like to think of it as a rope. The fibers that make up the rope are discontinuous, when you twist them together, you don't make them continuous, you make the thread continuous ... The thread has no fibers in it, but if you break up the thread, you can find the fibers again, So that, even though it may look in a thread as though each of those particles is going all through it, that isn't the case. That's essentially the descriptive model.

Context is thus seen as the activities that participants engage in, the reflexive relationship between those activities and the artefacts that make them possible (Engeström, 1990). Context has a dynamic dialectical nature. Text and context define each other. One focus of this project is on the ways in which language provides a context that defines clinical decision making, and how clinical decision making in turn defines its contextual language.

1.4.3 Views of Culture

Culture can be defined in a number of ways. A common view is that of Goodenough (1957) who said that culture is whatever it is one must know in order to behave appropriately in any of the roles assumed by any member of a society. However, the problem with this view is that it relegates culture to a collection of “things”, a pool of ideas to be operated on by cognition (Hutchins, 1995). Hutchins's view is that culture is better thought of as a process, the human cognitive process in which our everyday cultural practices are enacted. In this view, the “things” and ideas which are commonly listed as culture are, in fact, the end-products of the cultural process. Thinking of culture as a process allows us to weave in the element of cognition where it belongs - at the heart of culture. So mind is the internalisation of culture and culture is the externalisation of mind (Cole & Levitin, 2000).

Culture, of course, is not perfect. It is an adaptive process that accumulates partial solutions to frequently encountered problems (Hutchins, 1995). A large part of this imperfect process is language. As McDermott (1993) pointed out cultures give us language to express ourselves without letting us know the limits of that expression. A

large part of becoming a professional clinician is learning the appropriate language and coming to terms with its limitations and working within them.

1.4.4 Distributed Cognition

Cognition is usually conceived of as something that occurs exclusively inside the head. This view is a by-product of cognitive psychology which uses the metaphor of mind as computer. However, there is a growing dissatisfaction with this view and alternative formulations of mind and cognition have been postulated which have more relevance in an interpretive approach to human practice in the real world; and a better fit with the metaphor of mind, culture and practice as intimately woven together.

Bateson (1972) proposed the following thought experiment.

Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do I start? Is my mental system bounded at the handle of the stick? Is it bounded by my skin? Does it start halfway up the stick? Does it start at the tip of the stick? (Bateson, 1972, p. 459)

The point Bateson made is that there is an important sense in which we should think of cognition as being distributed throughout our environment (Salomon, 1993). Context is all-important. Bateson (1972) further pointed out that when the blind man sits down to eat a meal, knives and forks then become the relevant context for cognition. Cole (1996) argued that what we call mind and cognition work through artefacts, and they cannot be unconditionally bounded by anatomy. Cognition is distributed in the "artifacts which are *woven together* and which weave together individual human actions in concert with and as part of the permeable, changing events of life" (emphasis in original, pp. 136-137). We should not mistake the properties of a sociocultural system for the properties of an individual, which is an error that is commonly made in the cognitive sciences that tend to assume that cognition is all within the head.

Cognition is also distributed within communities. Hutchins (1995) for example, undertook a cognitive ethnography of the ways in which cognitive tasks were distributed among the members of a team and the artefacts available in a real world, working situation. There is a growing number of such studies looking at the cognition of team work in the real world

(Goodwin & Goodwin, 1998; Heath & Luff, 1998). This research project follows this trend.

1.4.5 Vygotskian Perspectives

For Vygotsky (1978, 1986) as for Malinowski, the power of language lies in the ways it is embedded or interwoven into the rest of our activities. According to Vygotsky too, the functionality of language was more important than its power to represent. Lev Vygotsky was a Russian psychologist whose work, suppressed for many years in the Soviet Union, became available and translated into English only in recent decades. Vygotsky proposed a number of ideas which in the later years of the twentieth century started to have a profound effect on the intellectual life of the Western world. He took his initial inspiration from the early work of Karl Marx (1967) who deplored the way in which mechanical materialism eliminated human agency and idealism put it in the head or soul of the individual. Vygotsky saw this dichotomy emerging as "a crisis in psychology" that was developing in the first half of the twentieth century. On the one hand there was the subjectivity of Freudian psychoanalysis, and on the other, the objectivity of behaviourism. Vygotsky sought to find a way to bridge the division between these competing schools of thought and develop a psychology which would embrace both subjectivity and objectivity in a balanced fashion.

Vygotsky asserted that humans can only be understood when pursuing their normal activities within a realistic and relevant context. This is always a sociocultural context, even when working alone. There is a "situatedness" in people's lives which cannot be divorced from human activity. He introduced the notion that central to human activity and cognition was the mediation of artefacts. According to Vygotsky, the unit of analysis was humans engaged in artefact-mediated activity, rather than the isolated individual. This recognition of the centrality of artefacts in human life was one of his most important insights. An artefact is "an aspect of the material world that has been modified over the history of its incorporation into goal-directed human action" (Cole, 1996, p. 117).

Artefacts can be anything that humans use. They vary from tools, such as stethoscopes and other hardware, to intellectual artefacts, of which the most important by far is language, such as the professional terminology of a health care profession. The social

institutions in which we participate are also artefactual. Artefacts are simultaneously ideal and material. For example, the words we use in language are prominently ideal but must have some material instantiation, even if only in the form of sound waves, writing or neuronal activity. An important aspect of artefacts is the way they carry the past into the present. Mastering the use of artefacts and the practices in which they are employed enables people to assimilate the history and culture of their professions and to become proficient practitioners in their own right. Mastering the artefact of language is a particularly crucial aspect by which clinicians become acculturated into their professions. Using language appropriately, in both written and verbal forms, is a key aspect of demonstrating professional competence. Vygotsky maintained that artefacts are not external to human thought, acting upon it. He proposed that artefacts fundamentally shape thought, constitute it and transform it, language especially. Vygotsky held that consciousness itself is dependent on the mediation of language. "Thought is not merely expressed in words; it comes into existence through them." (Vygotsky, 1986, p. 218), and again, thought "does not express itself in words, but rather realises itself in them" (p. 251).

According to Vygotsky, language and consciousness are intimately woven within a matrix of social activity. Therefore, situations in which people are required to articulate their thoughts and justify their opinions provide an opportunity to observe and analyse cognition in action. Conversely, cognition in action becomes available for analysis in those situations in which cognition must be expressed in language.

Vygotsky also emphasised the ways in which society and its individuals are, in turn, mutually constitutive, sometimes described as his dialectical approach; that is, there is a reciprocal relationship in which a society is maintained and developed by the individuals who contribute to its activities. A health care profession is a form of society. Who and what people become depends to a large extent on the social activities in which they participate. It is important to emphasise that rather than the acquisition of thought or culture, it is more productive to think in terms of socialisation into a culture, or socialisation into a way of thinking and knowing, and that this is a single process.

Subsequently Vygotsky developed the concept of the zone of proximal development (ZPD). This he viewed as the primary way that people learn. A learner works together

with someone more experienced. The difference between what the learner can achieve alone and with the help of a more experienced helper constitutes the ZPD. By working together the learner can eventually achieve competence. Vygotsky believed that we learn to accomplish things on an interpsychological level first in the ZPD, and that this is then internalised so that we can do the same on an intrapsychological level as individuals. This concept was in complete opposition to Piaget who believed the opposite. Piaget believed that humans developed cognitive abilities first and then learned how to use them socially. Vygotsky conducted an elegant series of experiments to substantiate his claims. For Vygotsky it was important to discover "the means and methods that subjects use to organize their own behaviour" (Vygotsky, 1978, p. 74). This project seeks to use Vygotsky's insights in exploring how clinicians use language as a psychological tool to shape their perceptions and actions, and become members of their professional community.

In this project the collective clinical decision making sessions can be seen as ZPDs. The PBL tutorials are classic examples of a ZPD. The tutor/presenter guides the students through the exercise of diagnosing a case. This guidance enables the students to emulate the expertise of a much more experienced clinician. The strength of the multidisciplinary clinical meetings is that the participants become capable of performing beyond the normal ability and knowledge of any one individual because the other clinicians provide additional knowledge and expertise. The participants form a ZPD for each other. Hutchins (1995) pointed out that there can be situations in which interpsychological functions may be sufficiently complex that they never become individualised. The multidisciplinary meetings may be examples of such a situation. This project sought to explore the details of how these ZPDs function, and of how the artefact of language is used to achieve the aims of the teams involved.

1.4.6 Wittgenstein and Ordinary Language Philosophy

Philosophers have tended to adopt one of two approaches to language. These are typified in the work of one man, Ludwig Wittgenstein. In the early part of his career, Wittgenstein proposed a one-to-one correspondence between parts of language and the context being described. His "Tractatus Logico-Philosophicus" (Wittgenstein, 1988) originally published in 1922 was part of the endeavour to develop a formal calculus that it was

hoped could overcome the limitations of language and allow rigorous analysis in a deterministic and reductionist manner. However, in his later work, published posthumously, especially the *Philosophical Investigations* (Wittgenstein, 1958) he renounced the earlier work and argued that analysis of language needs to take context as the point of departure. Language is seen as a fundamental part of the "forms of life" (context) in which humans engage, and these forms of life engender particular "language games" relevant to that context only. The meaning of words and utterances depends entirely on the way they are used in a particular context. Wittgenstein came to believe that a great deal of confusion was caused by "the bewitchment of our intelligence by language" (Wittgenstein, 1958, #109)⁴. When we speak, for example, of "having a plan in mind" the temptation is to "philosophise" and think that the mind is a box with contents; and ask pointless questions, such as "where is the mind and what are its contents?" (Fearn, 2001, p. 142). Wittgenstein frequently made the call to pay attention to the unarticulated and usually ignored "ways of going on" that we have invented for ourselves. He believed that by ignoring these "ways of going on" we misunderstand the ways in which we achieve our goals. A large part of these "ways of going on" is the way in which we use language, which in turn is intimately connected to the "forms of life". The implication is that by paying close analytical attention to our language games we can come to a deeper understanding of how language and knowledge are deployed in real world situations. Wittgenstein himself wrote, "My aim is: to teach you to pass from a piece of disguised nonsense to something that is patent nonsense" (Wittgenstein, 1958, #464)

The aim of Wittgenstein's method is to help us see the myths and assumptions we have about language that prevent clear thinking on any issue. One of his most important contributions was to point out that the meaning of a word depends entirely on its use, and that this use and the rules for its use (its logical grammar) are established and learned in social practice. For example, Wittgenstein used the terminology surrounding the sensation of pain to show that there are grammatical rules and expectations of this term that allow us to use it in certain ways only. Clinicians in pain centres have a professional understanding of what pain is, in addition to a common sense understanding, and it was

⁴ Most of Wittgenstein's work is written in the form of numbered aphorisms. It is conventional to use the aphorism number rather than the page number where appropriate.

an intention in this project to explore the ways in which this understanding is articulated and demonstrated in the clinical meetings, using the insights provided by Wittgenstein.

According to Wittgenstein, people's thoughts and concepts are better thought of as thinking and knowing, i.e. processes through which we discover the world that is. Thinking and knowing are processes operating with and through language. This view contrasts with what Wittgenstein saw as the great epistemological error of conventional philosophy that knowledge consisted of a process of inspecting the world to see what is “in” it. The implication is that if we want to discover what the nature of knowledge is, we need look no further than how language is used in ordinary ways. Philosophy can then become an analytic, descriptive practice, grounded in a naturalistic understanding of human action rather than a purely theoretical exercise in thinking or thought experiments (Lepper, 2000).

1.4.7 Views on Clinical Decision Making

Clinical reasoning has mostly been viewed from the perspective of the cognitive and behavioural sciences. In traditional medical courses, clinical decision making was rarely explicitly taught. Indeed, it has only in relatively recent years become a subject of research and of dedicated textbooks. Most attempts to provide a theoretical explanation of clinical diagnostic reasoning and expertise are based predominantly on cognitive theories (Kassirer & Kopelman, 1991; Schmidt, Norman & Boshuizen, 1990). However, in recent years wider qualitative perspectives have been brought to bear (Higgs & Jones, 2000). In the cognitive view, clinical decision making is believed to be a mixture of mental procedures such as induction, deduction and pattern recognition, largely based upon the metaphor that the mind is a biological computer. Most PBL courses are explicitly built on a hypothetico-deductive model, which is largely derived from the cognitive approach. Lists of hypotheses that can explain a patient's problem are drawn up, inductively, in order of probability (a differential diagnosis). Such lists are successively refined as more information is gathered until a definitive diagnosis is reached.

The hypothetic-deductive approach now entails an encouragement to adopt an evidence-based approach to clinical practice. Clinicians are expected to make use of available research which has been subjected to meta-analysis and ranked according to a quantitative

scheme that gives the evidence from randomised clinical trials a privileged position, as opposed to narrative knowing which is relegated to the realm of “mere anecdote” and is to be treated with suspicion. This thesis takes the position that the current evidence-based practice (EBP) approach to medical knowledge is flawed because of this, and that other ways of knowing, such as narrative, are important. EBP can be accused of scientism. Scientism is the narrow view that only the quantitative approaches of the natural sciences are appropriate to serious inquiry in all fields, including the human sciences. There is an undue emphasis on method in such an approach, and it was to contest this view that Gadamer (1989) devoted much of his work in philosophical hermeneutics.

1.5 Overview of the Philosophical Framework For the Thesis

This research sought to re-examine diagnostic reasoning from within a qualitative perspective, as advocated by Higgs and Jones (2000). The interpretive paradigm dominated the approach to data gathering and analysis. It is contended that the interpretive paradigm is more relevant to understanding human beings in their natural environment than the empirico-analytical paradigm. Because subjective interpretation plays such a prominent role in the way that people see and understand the world about them there is an important sense in which one can talk of there being multiple, constructed interpretations of reality. In this research I did not look for cause-effect relationships, but sought instead to explore the phenomenon of collective clinical decision making from the perspective of the participants, in their natural contexts. What meanings did the participants attach to what they were saying/doing? Quantifying and correlating sets of variables is unlikely to produce meaningful knowledge in this situation. Goodwin and Goodwin (1998) pointed out that the analysis of mundane action in the workplace constitutes an important locus for the integrated study of language, culture, social organisation, and the historically constituted material world within which these phenomena are embedded. The data from such qualitative studies is textual, not numeric or statistical.

Therefore, qualitative, interpretive methods that provide and make use of rich textual data are required. Qualitative methods are required in order to study clinical decision making. As Ratner (1997) pointed out qualitative methods are useful for understanding meaning, context, individuality of subjects, unanticipated events, and processes by which events

take place - rather than simply depicting outcomes. Ratner used the example of anger, but his insight applies just as much to clinical decision making which, like many phenomena...

is not a unidimensional variable, nor is it the sum of discrete, singular subvariables as positivists maintain. It is an integration of values, self-concept, perceptions, memories, deductions, inferences, and associations.
(Ratner, 1997, p. 55)

1.6 Overview of the Research Approach

1.6.1 Introduction

Bereiter and Scardamalia (2000) called for so-called opportunistic research into the collective clinical decision making exemplified by PBL. As they pointed out, this kind of research does not lend itself to the manipulation of variables, but needs detailed description and analysis of emergent behavioural patterns. So rather than exhaustively classifying data according to a predetermined scheme, they asked researchers to take a more inductive approach, and ask, "What's interesting here?" They added the caveat that one needs a well-developed framework within which one can decide what is interesting. What might constitute such a well-developed framework is, of course, a matter of some contention. The conceptual framework of this study needed to be one that synthesised the ideas of Vygotsky and Wittgenstein, outlined above. Such a framework is social constructionism and hermeneutic phenomenology.

1.6.2 Social Constructionism

In constructivism it is believed that the mind does not simply perceive reality but, in a sense, constructs it, that is, the reality we live in is an interpretation based on perceptions. Social constructivism entails the view that this process of reality interpretation is strongly influenced by social relationships. Social constructionism, while it accepts the tenets of social constructivism, places an emphasis on the role of language. Scholars in the social constructionist paradigm (e.g. Gergen, 1999; Shotter, 1993) have synthesised the ideas of Vygotsky and Wittgenstein. Such work also tends to incorporate ideas from Mikhail Bakhtin, a contemporary of Vygotsky, who emphasised the importance of dialogue and intersubjectivity in the constitution of human nature and activity (Bakhtin, 1984, 1986). Bakhtin effectively extended the Wittgensteinian notion of language games. According to

Bakhtin, there is no meaning that does not derive from a relationship of some sort, and to be human is to be relational. Dialogue and relationships, together with an emphasis on the importance of language are central features of the hermeneutic phenomenology of Hans-Georg Gadamer (1989).

1.6.3 Hermeneutic Phenomenology

This study utilised both social constructionism and hermeneutic phenomenology as an appropriate conceptual framework. Despite some differences the two are seen as complementary. The main difference is that hermeneutic phenomenology can be accused of too much concentration on individuals and their interpretations. However, Gadamer's philosophical hermeneutics is a version of hermeneutic phenomenology that emphasises dialogue, and can be seen as bridging the gap between hermeneutic phenomenology and social constructionism. In Gadamer's philosophical hermeneutics there is a recurrent emphasis on linguisticity, and on the understanding that language speaks and defines our meanings. Like Bakhtin, Gadamer was strongly of the opinion that language is central to what it means to be human, although Gadamer's emphasis was much more on interpretation as central to the human condition.

Phenomenologists seek to come to a deeper understanding of a phenomenon via people's experience of that phenomenon. Hermeneutics is the art and study of interpretation. The combination is the study of a phenomenon via people's interpretations of their experience of it. Hermeneutic phenomenology is a particularly powerful means to conceptualise health issues and has been widely used in health care settings (e.g. Benner, 1984; Svenaeus, 2000). In this study, students and health professionals were asked to reflect upon their experience of the phenomenon of collective clinical decision making, and these reflections formed the primary data source.

Primary data came from audiotapes of interviews with participants who were either health professionals in clinical meetings or students in PBL tutorials, together with field notes from non-participant observation. These were transcribed and subjected to intensive analysis. Thematic analysis focused on aspects of language use in clinical decision making.