Chapter 9  Conclusion

I think we gain most if we appreciate these analyses not as reports on objective truth, but as “frames” or “lenses” on our world – to shake us up, reconstruct, give further dimension, and open new vistas of action. There is always more to say – for which we should be thankful. (Gergen, 1999, p. 86)

9.1 Introduction
In this concluding chapter I summarise the major findings and discuss the limitations and implications of this research project in its wider context, as well as the implications for teaching and research. This is a qualitative, interpretive study and, as Gergen indicated in the quotation above, it is not my aim to provide a report of objective truth, about what is “really real”; rather my aim has been to follow Wittgenstein’s (1958) advice to reconsider what is always before us, unnoticed and in plain view. The aim of this study is to contribute to our understanding of clinical reasoning by re-interpreting a lot of what we already know by the use of different lenses or frames of reference. Each of the themes of this project can be a lens on the phenomenon of clinical reasoning. For example, narrative is a lens that has attracted particular interest in recent years, and provides exciting insights into both the experience of illness from the patient’s perspective and the experience of clinical decision making from the health professional’s point of view.

9.2 Summary of Findings
The iceberg model is a means of illustrating the complexity of clinical decision making when different perspectives of language are considered and synthesised. In the collective settings of this research, verbal and written reports are the publicly available products of a process that involves the use and integration of many aspects of language, including words and utterances, category systems, metaphors, heuristics, rituals, and narratives, together with rhetorical and hermeneutic skills. All these aspects of language use can be seen as constituents of the thinking that goes into clinical reasoning. This is because thought and language, following Vygotsky, are interdependent. In order to become competent at clinical
decision making, and to be seen to be competent, individuals need to master these various aspects of language and coordinate them in ways that are acceptable to both the community of practice that constitutes their profession, and the community at large. These language aspects provide an interpretive repertoire, created by the cultures of both the health profession and the wider community, that each individual must master.

9.2.1 Words/Utterances
Clinical decision making depends on health professionals knowing not only the terminology of their profession but also how to use it appropriately. In highly technical professions the terminology can be like a foreign language at first. Newcomers must learn the words and master them, becoming fluent in their use. They must become so proficient in language use that they do not need to think about which words to use and when to use them. Appropriate word use must become second nature. That is, appropriate word use must become embodied and ontological.

9.2.2 Categories
Terminology is a foundation for the category systems of a profession. The category systems must also become embodied. Category systems reflect the underlying conceptual structure of the field. An example in medicine is the systems review that all students are taught, which includes categories such as the neurological and cardiovascular systems. Categories allow information to be organised in a meaningful way. They also predispose to the gathering of information in an organised and semi-automatic way.

9.2.3 Metaphors
Metaphors can be seen as a development of categories. More abstract categories can be conceptualised in terms of more concrete categories. Metaphors predispose to particular perspectives, which can be more or less useful. Seeing the body as a machine encourages health professionals and patients alike to believe that a cure is always possible because, in principle, it is always possible to repair a machine. Seeing the mind as a container encourages educators to adopt certain methods of education rather than others. In contrast, seeing life as a journey can provide a way for coping with chronic illness; seeing knowledge
as practical know-how prompts educators to adopt teaching methods that closely reflect real world practice.

9.2.4 Heuristics/Mnemonics
Heuristics and mnemonics are cognitive tools that can assist health professionals to manage a complex body of information. Typical examples include mental checklists and proformas. Conscious attention to heuristics and mnemonics was more important to the students because they were still learning how to use them. Once the heuristics and mnemonics became embodied they were used automatically and almost unthinkingly. Students who made the effort to combine different mnemonics in practice found that their competence was enhanced.

9.2.5 Ritual
It was clear that ritual played a prominent role in clinical decision making. Gathering information from patients and other health professionals was done in a ritualistic manner. Rituals permit users to concentrate on the problem at hand as rituals guide health professionals through the process of information gathering. Following a ritual allows the health professional to know that all relevant information will be gathered. The use of ritual means that health professionals can focus their attention on the problem at hand without having to worry whether relevant information will be gathered. In a sense the ritual guarantees that information gathering will happen appropriately and expeditiously, both important factors in the busy world of practice accountability. Rituals are closely related to the category systems in use together with the heuristics and mnemonics built on the categories. There is also a performative aspect of ritual when delivering clinical reports to others. The ritualistic delivery helps to reassure the recipients of a report that the report is legitimate and sound.

9.2.6 Narrative
Clinical decision making is the construction of a narrative about a patient within the conceptual framework of a health profession and the context of the patient and the workplace. This is done in a manner that not only takes account of the past and present but also suggests the narrative trajectory that the patient’s story might follow in the future,
predisposing towards particular decisions about management. In the pain clinic, narratives were dynamically constructed by a team of health professionals. These people had to learn the skills of adding to the narratives of their colleagues in a way that avoided needless repetition yet provided a fuller story of the patient. This was important because many of the patients attending the clinic had multiple and complex problems that included biological and psychosocial issues. The data also indicated that many patients attending the pain clinic benefited enormously from being given a detailed and comprehensive narrative about their problems for the first time. The clinic’s rehabilitation program can also be seen as an attempt to help patients reconstruct their own narratives, from stories that were self-defeating to stories that were much more positive.

**9.2.7 Rhetoric**

Rhetoric plays a large part in clinical decision making, utilising all the themes mentioned so far. A clinical report must be constructed, not simply as a description but also as a persuasive narrative that conveys intelligibility, legitimacy, thoroughness, and authority. This is so that the audience of a report (constructed narrative) can confidently rely on it to make serious decisions about the management of a patient. The audience can be a patient or other health professionals. Some patients in the pain clinic found that the narratives they were given after their assessments were so persuasive that they were happy to continue their lives without feeling the need to seek further treatment.

The medical students were discovering that a clinical report composed with good rhetoric can also anticipate and deflect potential challenges to that report. If a challenge is mounted then rhetoric is needed in responding to the challenge. The pain clinic staff realised that there were ways of diplomatically responding to fellow professionals that were non-confrontational and were in keeping with the collaborative ethos of the clinic. This is a rhetorical skill. Even when working alone, a health professional has an internal dialogue and will need rhetoric to persuade him/herself to favour one decision over another.
9.2.8 Hermeneutics

Hermeneutics can be seen as the converse of and a complement to rhetoric, in that health professionals need interpretive skills when listening to the stories of patients and to clinical reports from other professionals. There are many aspects of hermeneutics. These begin with simple methodological hermeneutics where health professionals attempt to understand the meaning of the patient’s problem(s). This was seen in the medical students’ preoccupation with asking the right questions. Then there is a more ontological hermeneutics, more concerned with the particular way of being-in-the-world that typifies particular health professions. An example is the similarities and differences between physicians, surgeons, and psychiatrists, or between Western and Eastern health professionals. It is ontological hermeneutics that meaningfully integrates all the categories, narratives, rituals, etc. into particular ways of naming and framing clinical problems. Hermeneutics is more than a tool for coming to know the world around us. Hermeneutics shapes human being(s) in particular ways.

Hermeneutics provides a means of bringing together all the other themes mentioned so far. In particular, the dialogical hermeneutics of Gadamer provides a conceptual framework that gives prominence to the linguisticality of human being. All the themes in this study are part of that linguisticality. According to the Gadamerian linguistical view, it is not possible for human beings to have direct and unmediated encounters with the things of experience. Our culturally shared interpretations provide us with the interpretive repertoire to make sense of the world. Culturally shared interpretations have their foundation in language. The importance of language in this view cannot be emphasised enough. As Gadamer wrote: “Language is not just one of man’s possessions in the world; rather, on it depends the fact that man has a world at all”. (Gadamer, 1989, p. 443). When people enter a health profession they are gradually shaped to interpret patients and their health problems in particular ways that are infused with the language of their profession. These interpretations cannot even be conceived without the language of the profession. The iceberg model summarises the different facets of linguisticality that constitute clinical decision making.
9.3 The Social Nature of Clinical Decision Making

When clinical decision making is performed alone, health professionals have a dialogue with themselves as well as with their patients. Health professionals therefore need all the above-mentioned resources, including rhetorical and hermeneutic skills, to construct a persuasive patient narrative even when thinking alone to themselves. This means that clinical decision making is in origin and nature a social phenomenon through and through. Vygotsky (1978, 1986) argued that thinking is the internalisation of talk we have with others, and that in learning to think we learn to have conversations with ourselves. Following Vygotsky, high level thinking skills are learned and performed socially first and then gradually internalised.

To adopt a reductionist approach and examine the brains of people (as with functional magnetic resonance imaging, fMRI) engaged in clinical decision making is not likely to reveal much about the nature of clinical decision making. This is because the criteria for deciding what constitutes clinical decision making, and what constitutes good or bad decision making are social and dependent entirely on context. Examining the brain states of people can give information about many conditions, but this can never tell us what these phenomena mean to people. For example, finding the parts of the brain that are affected by chronic pain or are involved in memory may be useful, but can never tell us what it means to the people affected. This depends on the context and how the context is interpreted (Gergen, 1988).

This point of view has something in common with poststructuralism. In structuralism, as devised by de Saussure (1974) language does not reflect a pre-existing social reality, but forms a framework for us to interpret and categorise reality. Poststructuralism builds on this idea, with the contention that “the meanings carried by language are never fixed, [but] always open to question, always contestable, always temporary” (Burr, 2003, p. 53). As Burr pointed out, if language is the source of meaning then explanations of what people do and feel should be sought, not within individuals but out in the linguistic space between them, which is in keeping with Vygotsky's ideas. The poststructuralist aspect has not been pursued in this thesis as poststructuralism is associated more with the deconstruction advocated by scholars such as Derrida (1980). Such deconstruction tends to study already existing texts, taken out of context, whereas this thesis is more concerned with the dialogical approach of language.
use, situated in context, as advocated by Vygotsky, Bakhtin, and Wittgenstein (Shotter, 1993).

9.4 Limitations and Transferability of Findings

From an empiricist point of view an immediately obvious limitation of this project is its qualitative nature. It is not possible to generalise findings to the whole population of medical students learning by PBL, or all multidisciplinary clinics, in the same way that a more quantitative approach might claim to do. However, this project has not been conceptualised in an empirico-analytical manner; rather its aim has been to study a local setting in depth, at the expense of a broader yet more superficial study. The aim of this study has not been to statistically measure or compare concepts and the phenomenon of clinical decision making, but to understand them in greater depth.

This study has drawn much of its inspiration from cultural psychology research. As Geertz (2000) pointed out, such a psychology, like anthropology, seems to take the whole of experience for its object, and can draw on many kinds of scholarship. There is always a danger in this kind of study in casting the net too wide. In commenting upon Bruner’s (1987, 1992, 1997) version of cultural psychology, Geertz (2000) noted that Bruner had concentrated on narrative. In this study I looked more widely at other aspects of language besides narrative, in an attempt to formulate a synthesis of these factors. However, syntheses themselves always run the risk of becoming too broad. To guard against this I have restricted the study to collective settings and language use. Other possibilities that have been avoided, but that could be the topic of future research, are poststructuralist discourse analysis and a critical social science approach.

Despite the deliberate focus on the local rather than the general, it is possible to reflect on the transferability of my findings to other settings. Noting the argument that linguisticality is foundational to the human condition, it is likely that the findings of this study could be transferable to many other similar settings. Problem-based learning is becoming widespread throughout the educational systems for many health professions, and is generally well-received. There is considerable research to show that students like PBL (e.g. Colliver, 2000;
Norman & Schmidt, 2000). This is because PBL endeavours to reflect real world problems and problem solving, helping to prepare students for practice and to learn new knowledge in a manner that lends itself to application to real cases. I consider it highly likely that any other group of health care professional students in PBL programs would have given similar responses to the interview questions, and would have related similar experiences of PBL and learning clinical decision making in practice. Having been a PBL tutor in this medical program for some years I can confirm that the group of students selected was typical.

The transferability of the findings from the multidisciplinary pain clinic is more problematic due to the uniqueness of this particular setting. There seemed to be an awareness among the staff in the clinic that they worked in a privileged environment, in a setting that was world-renowned and attracted many visitors from around the globe. However, the number of multidisciplinary settings is steadily increasing and other settings could be investigated to see to what extent the findings of this study can be transferred. For example, it is now becoming common practice for cancer cases to be assessed by a team consisting of a radiotherapist, a medical oncologist, and a surgeon. The centrality of linguistics to human nature and functioning leads me to argue that it is likely that the main themes of this study would be seen in other multidisciplinary settings. It can be surmised that some of the aspects of language would be different in different settings. In a cancer assessment, issues of life and death and terminal care presumably permeate the activities of such clinics. Therefore it is likely that the narratives and metaphors are somewhat different from those in the pain clinic where long-term coping with chronic problems dominates the discourse.

There is also the issue of transferability of the findings to solo practitioner settings. My findings indicate that the clinical decision making performed and learned socially is internalised and becomes the practice of each health professional. The medical students certainly believed that they were using the PBL process when assessing patients on the wards. On the basis of my interpretation of clinical decision making as a linguistic phenomenon, it is likely that the findings of this study can be replicated when solo practitioners are the main focus of research. The findings in this study indicate that it is likely that practitioners in other forms of health care, such as traditional Chinese medicine, think
through clinical problems using similar features of language, even though the details may be radically different. I would contend that specialised terminology, category systems, metaphors, heuristics, narratives, rhetoric and hermeneutics are the core cognitive tools used by health professionals of any kind.

9.5 Implications

9.5.1 Introduction

This research has implications for future research as well as teaching. As shown in the literature review chapters, there is a growing interest in many aspects of language use in clinical reasoning. For example, within the field of pain management there has, in recent years, been a sudden upsurge of interest into ways that narrative can be used to come to a deeper understanding of what is involved in the pain experience and how this can be used to improve care for patients (e.g. Carr et al., 2005). However, there appears to be little work that explicitly links the different aspects together, such as narrative and metaphor. The iceberg model is proposed as a step towards such a synthesis.

9.5.2 Dialogical versus Representational Language

In this thesis the social constructionist premise is accepted that dialogical relationships are crucial throughout the human sciences. Therefore there is a need to explore in greater depth the dialogical relationships between features of language use in many contexts. For example, Franke (2000) pointed out that there appears to be a close relationship between rhetoric and metaphor. The academic world lost interest in metaphor at about the same time it lost interest in rhetoric. The revival of interest in rhetoric in recent decades is matched by a revival of interest in metaphor. The relationship between the two is worthy of further investigation, and clinical reasoning is a field where such inquiry might prove fruitful.

The dialogical view of language is opposed to a representative (picture theory) of language. The dialogical view, following Vygotsky, Bakhtin, and Wittgenstein, is that we should consider language as an expressive tool for communicating with each other within our various communities of practice (or forms of life and their respective language games to use Wittgenstein’s terminology). In the dialogical view language is also seen as the tool by which
we construct our interpretations of reality within these same communities of practice. This contrasts with the representative view of language, in which language is conceived as merely showing (representing) what already exists in the world around us. This is the point at which this thesis comes into conflict with views of clinical decision making based upon cognitivism and probability mathematics. The latter views entail a strongly representative view of language use, with the implied assumption that their findings can bring us closer and closer to the “truth”, to what is “really real”. Proponents of the representative view tend to see it as being above value judgments and completely objective. This thesis takes the dialogical view as expressed in the following quotation from Nelson Goodman:

If I ask about the world, you can offer to tell me how it is under one or more frames of reference; but if I insist that you tell me how it is apart from all frames, what can you say? We are confined to ways of describing whatever is described. Our universe, so to speak, consists of these ways rather than of a world. (Goodman, 1978, p. 3)

As soon as we attempt to articulate what we perceive in the world around us we enter a world of language, and the resulting descriptions are framed for particular communities of practice. Different frames of reference are distinguished by their usefulness (Gergen, 1999). For example, if cognitivism has been a dominant paradigm for the construal of clinical reasoning it is because cognitivism has been useful to those who use it, permitting them to conceptualise clinical reasoning, discuss it, and articulate ways of teaching it that seem to work. From this viewpoint it can be argued that cognitivism replaced behaviourism not because it was closer to the truth of human cognition, but because it was more useful. It was a more useful way to conceptualise the relationships between cognition and human behaviour than that provided by behaviourism. More interpretive paradigms, such as cultural psychology or narrative studies, could replace cognitivism for similar reasons. The claim would be that they are more useful for understanding clinical reasoning, rather than being closer to an ever-elusive truth.
9.5.3 Validity
Cognitivists, and others with a commitment to closer and closer approximation to the truth, are likely to counter the social constructionist claims above by referring to the validity of the conceptual framework they use. In reply, it can be argued that validity is never absolute and objective validity, but validity for and within a particular community of practice (Gergen, 1999). A community of practice collectively establishes what constitutes its standards of validity, its standards of objectivity, and how these standards are to be used and articulated. For example, the psychometric questionnaires used by clinical psychologists to assess anxiety or depression are valid, not because they accurately measure the amount of pain or anxiety or depression that individuals have, but because clinical psychologists have collectively found them to be useful tools that fit within the language game of clinical psychology. Such quantitative measurement relies in turn upon the reification of concepts such as anxiety and depression. Reification is likewise a useful move within cognitivism, not because anxiety or depression necessarily exist as distinct entities somewhere in our brains, but because it is useful for the community of practice made up of clinical psychologists to think and talk in this way. In Gadamerian hermeneutic terms, validity can be seen as a statement arising from the tradition of a community of practice, and validity defines the kind of question that can be asked and what an appropriate answer will look like within that paradigm. Validity becomes part of the forestructure of understanding.

9.5.4 Critical Social Science
Cognitivism and more interpretive approaches to clinical reasoning may be incommensurable, and we may be entering a time of Kuhnian paradigm shift. It can be argued that what will decide the issue between the different paradigms is not the degree to which one or the other corresponds to the truth, but the degree to which one paradigm is more useful than the other. My position is that the more interpretive approach is clearly more useful. However, if we take heed of Kuhn’s (1996) descriptions of paradigm shifts, the transition is not likely to be easy. There are vested interests in maintaining the status quo. For example, clinical psychologists have fought long and hard to persuade the medical establishment to accept interventions such as cognitive behavioural therapy into the mainstream of Western medicine. Reconceptualising cognitive behavioural therapy in
narrative terms, for example, is likely to encounter stiff resistance. The worldviews on which each paradigm is built, and the philosophical assumptions underpinning them, are radically different. Cognitivism is located firmly within the empirical paradigm where language is representative of the truth, whereas narrative, for example, is within the dialogical, constructivist view of language and reality.

Future research could take a more critical social science approach, which explicitly examines power relations between different communities of practice, and the ways in which a community of practice establishes its authority and validity over rivals. A fruitful field of research might be pain management, where there are a great many different communities of practice vying for acceptance. These communities of practice vary from mainstream Western medicine to all the various so-called complementary therapies, such as homeopathy.

Another field of future scholarship could be the relationship between the linguistic approaches described in this study and evidence-based practice (EBP). EBP is currently enjoying an ascendancy in Western medicine, and certainly has much to commend it, with its emphasis on basing practice on well-founded evidence. However, EBP has a philosophical base which is open to challenge, as it is founded upon notions of populations and people seen as atomistic data points, and where statistical correlations are privileged. Within EBP, narrative is relegated to the lowest level of evidence and dismissed as mere anecdote. If the linguistic approaches advocated in this study are to be taken seriously by the mainstream establishment of health professions a radical overhaul of EBP or a revision of its position of authority will be needed. A critical social science approach could be used to both research and move these issues forward.

9.5.5 Postmodern Health Care

A further implication of this research is that the present study can be seen as part of a wider postmodern view of health care practice (Morris, 1998). In a modernist view of health care it is asserted that Western medicine, with its foundation on clinical pathology, based on THE

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1 In general terms, I see poststructuralism as building upon structuralism, whereas postmodernism is in opposition to modernism.
BODY IS A MACHINE metaphor, is the best. This is because the modernist position is seen as cohering more closely to the truth than any rival approach. This is to take a univocal viewpoint. Only the voice of clinical medicine is to be accredited with insight and authority. EBP is part of this tradition. Foucault (1973) described this modernist view of health care practice as the clinical gaze, in which the primary interest of the health professional is in the pathological lesion that is believed to be the sole cause of a patient’s problem. Only the clinician's insight and knowledge are considered as being important and authoritative. In a postmodern view there are many voices to be considered within health care. For example, proponents of the narrative view of health care as espoused by Frank (1995) accept the voices (the beliefs and narratives) of patients and their families as both relevant and important, just as much as any pathological findings. There are many examples from the literature of medical anthropology to support this view (e.g. Kleinman, 1988). What is considered a problem that requires the intervention of the health professions is profoundly affected by a person’s culture. Culture provides an interpretive repertoire that includes an environment of stories that are a resource for people to make sense of what happens to them. Morris (1998) called for what he described as a biocultural approach to health care that would be multivocal, where these other voices are truly valued and play a role in clinical decision making.

The multidisciplinary clinic in this study seems to have taken a step in this direction. The multidisciplinary health professionals have realised that there is frequently no identifiable organic pathology for them to treat, and they place great emphasis on finding out patients’ beliefs about their pain, as they realise that changing these beliefs can be enormously therapeutic. These health professionals do not appear to see their work in postmodernist terms but interpret their work as an extension of modernist medicine. This is almost certainly due to the strong influence of cognitivism in this particular clinic. It can only be surmised that if a more explicitly interpretive, multivocal approach were to be adopted in the clinic then there is a strong possibility that the ways in which the multidisciplinary health professionals conceptualise their work would be enriched and patient care might be improved.
This study has close parallels with other recent research. For example, Mol (2002) adopted what she described as a praxiographic approach, focusing on the ways in which atherosclerosis is “enacted” or experienced in a hospital. Mol claimed to be using an ethnographic approach, although it can be argued that in practice she appeared to be adopting a hermeneutic phenomenological approach to atherosclerosis. Mol’s contention was that there are, in effect, different kinds of atherosclerosis for different people. The patient enacts and experiences the symptoms, which is one form of atherosclerosis. A pathologist enacts and experiences the atherosclerosis seen under a microscope, and a vascular surgeon enacts and experiences an atherosclerosis of arterial blockages seen and cleared in an operating theatre. Mol discussed how all these different atheroscleroses are enacted and coordinated by the individuals concerned. Such an approach provides insight into how health care works in practice. In postmodern narrative terms, Mol recognised the different voices that are coordinated in constructing the full story of atherosclerosis in a patient. Medical anthropology and sociology have tended to focus on the patient’s experience of illness in the past. This project, together with Mol’s, is an attempt to look at the health professionals’ interpretation of their experience of patients’ illnesses or, more precisely, how sickness and disease are constructed and coordinated by health professionals in their practice.

9.5.6 Postmodern Philosophy

This project has a philosophical bent to it, and can be seen as part of a wider trend within philosophy. According to Toulmin (1990), modern philosophy has generally become more and more abstract, beginning with the work of Descartes in the seventeenth century, and more and more divorced from the everyday concerns of the world and from real world problems. Before that time philosophy had a strong practical side to it, going all the way back to Aristotle’s notion of phronesis. However, in recent decades the practical aspect has started to return. This can be seen, for example, in the growth of interest in medical ethics, which is primarily concerned with practical applications in the real world of health care. As stated earlier, narrative ethics is a flourishing field within medical ethics as it can be applied to real cases. One of Wittgenstein’s great insights was that abstract philosophy had become bound up with problems of its own making. By focusing on the language used to frame problems, Wittgenstein sought to show how many abstract philosophical problems were in fact non-
problems, due simply to confusion about language, and in need of dissolution rather than resolution. Husserl, and later Heidegger and Gadamer, developed phenomenology and hermeneutics in an attempt to revitalise philosophy. Hermeneutic phenomenology is concerned with interpreting the historical, local and particular rather than the universal and abstract, accepting that there can be no final and decisive interpretation of any issue. This thesis is very much within this postmodern trend that attempts to apply philosophy to real world issues, with an emphasis on language.

9.6 Supplementary Interpretations

As indicated by the quotation from Gergen at the start of this chapter, the data of this project can always be interpreted in different ways. This is not to take a relativist position and does not mean that simply any interpretation will suffice. A carpenter is free, in principle, to shape and combine pieces of wood in an infinite number of combinations. However, if the end-product is to be useful for humans to sit on then there are a great many limitations placed upon its shape (Gergen, 1999). Likewise, the data in this study can be interpreted in any number of ways, but only a few ways are useful for understanding and improving clinical decision making. For example, it could be argued that the most foundational aspect of language use is metaphor not words. This seems paradoxical if metaphor is considered in contrast with literal language.

However, as Franke (2000) pointed out, literal language can itself be regarded as metaphorical in nature. Letters and words are figures, concrete images referring to something else. Letters and words, it can be argued, are therefore essentially metaphors. If metaphor is seen as transfer of meaning then even literal language has to be metaphorical at heart. This idea is in keeping with Wittgenstein’s argument that there is no bedrock to meaning other than language, and the meaning of language is not fixed, but is dynamic and changing depending on the context of its use. This view is also consistent with the ideas of Vygotsky and Bakhtin, in which people first form dialogical relationships and then reach out to the world around them, negotiating with each other how to make sense of it all, depending on context.
Franke (2000, p. 140) argued that metaphor should be seen “not simply as operating upon already existing, nonmetaphorical forms of language, but as the originary nature of language itself.” The implication of this viewpoint, according to Franke, is that even defining things as objects and into categories is metaphorical. For something to be recognised as something in particular it must have defined properties. The properties we assign to things come from language. A linguistic, metaphorical process allows us to distinguish all things as things and then to categorise them. Metaphor can thus be seen as deeply ontological. This would mean that language is relational and dialogical in a very deep sense. It suggests that ostensive dictionary definitions of words are secondary, allowing a community of practice to fix a meaning within a certain context for a particular usage.

Ostensive definitions become part of the interpretive repertoire used by a community of practice. Interpretive repertoires can include “broadly discernible clusters of terms, descriptions and figures of speech often assembled around metaphors or vivid images … They are available resources for making evaluations, constructing factual versions and performing particular actions” (Potter & Wetherell, 1995, p. 89). There is a strong hermeneutic element to this view of language as fundamentally metaphorical. In Gadamer’s terms, new meaning becomes the point at which horizons of understanding are fused. So meaning is interactive, a boundary phenomenon. As Franke asserted, “metaphor assumes a transcendental-hermeneutic function and reveals the world in the moment of its emergence as a linguistic creation or construction” (p. 151). This means that there are alternative ways of representing the findings in addition to the iceberg model. An alternative model of the language aspects of clinical decision making is presented below.
Figure. 9.1 An alternative model for conceptualising language in clinical decision making and communicating it.

These are all embedded within a community of practice and the larger culture. This alternative model emphasises the construction of meaning through language. It applies to clinical decision making if we see clinical reports as a construction of meaning.
9.7 Teaching implications

This study has implications for the study of PBL. The results imply that PBL settings are ideal dialogical situations for learning the skills of clinical decision making. In Vygotskian terms, PBL sessions are an excellent zone of proximal development (ZPD). Without exception, the students found that they could with relative ease transfer the skills in assessment from the PBL setting to the clinical setting where they worked with real patients. This is a ringing endorsement for the pioneers of the PBL approach in medical education, who had to overcome much opposition in order to implement such a radical change. There is much to be said for adopting Vygotskian ideas, for example, to conduct further research in PBL.

The research literature in PBL reveals a deep confusion in attempts to develop a sound theoretical basis (Loftus & Higgs, 2005). This confusion can be seen as coming from attempts to conceptualise PBL from within cognitivism, which has a poor interpretive repertoire for dealing with such a social and dynamic setting such as a PBL tutorial. A more interpretive view could open the way to a deeper understanding of PBL. From Vygotsky, we can use ideas such as the ZPD, the developmental approach to learning, and psychological tools. From Bakhtin we can use the notion of dialogism to explore the relationships established in PBL. From Wittgenstein we can take the idea that the meanings of the words used in a particular setting need to be explored in depth and defined clearly before embarking on research (Harré & Tissaw, 2005). This could, in turn, lead to better implementation of PBL and its integration within clinical training.

Many of these ideas could also be developed to come to a better understanding of multidisciplinary practice and how it might be taught to health professionals who are new to such practice. In the multidisciplinary clinic in this study the health professionals felt that, as a team, they were much more able to offer a comprehensive assessment of the complex problems brought to them by the patients there. The multidisciplinary clinic setting can be seen as a variation on the ZPD, where every health professional provides scaffolding for all the others, and where the problems are so complex that no individuals are ever expected to
perform at the expert level on their own. The multidisciplinary setting is thus a permanent ZPD, even for long-standing and experienced members.

Vygotsky was a great advocate of studying psychological functions in the process of change and development. He maintained that once fully internalised higher level psychological functions became fossilised. He did not mean to be disparaging, but meant that these functions become ontological and automatic. Vygotsky believed that the nature of a higher psychological function was more clearly revealed in the ZPD when people were still acquiring and developing the skill. This insight was borne out in this study. The medical students had many insights into clinical decision making skills because they were often painfully aware of what was required and that they had not fully mastered these skills. The health professionals in the multidisciplinary clinic felt this way when they first arrived. In general, the clinic health professionals were more consciously focused on the goal of dealing with a patient’s problems, rather than the skills they needed to solve them.

9.8 Conclusion
Clinical decision making is a social and linguistic skill, acquired by participating in communities of practice called health professions. These communities of practice have their own subcultures, which include the language game called clinical decision making, which in turn includes an interpretive repertoire of specific language tools and skills. Participants new to a profession must come to embody these skills under the guidance of more capable members of the profession, and do so by working through many cases. The interpretive repertoire that health professionals need to master includes skills with words, categories, metaphors, heuristics, narratives, rituals, rhetoric, and hermeneutics. All these skills need to be coordinated, both in constructing a diagnosis and communicating findings to other people, in a manner that can be judged as intelligible, legitimate, persuasive, and carrying the moral authority for subsequent action.

The future of research in clinical decision making is likely to be controversial. There are many competing voices claiming to have the conceptual framework to understand such phenomena. These include voices as disparate as scholars of brain imaging and
connectionism, and the voices of cognitive psychologists and probability mathematicians discussed at length in the literature review chapters. In discussing Kuhn’s (1996) notion of paradigm shift, Geertz (2000) mentioned that “scientific change does not consist in a relentless approach to a waiting truth but in the rollings and pitchings of disciplinary communities” (p. 163). In my opinion, there will be a lot more “rolling and pitching” between the different scholarly communities on the nature of clinical reasoning in the years to come. This is a sign of vitality in the field and is to be welcomed.