Chapter 4: Language and Interpretive Approaches to Clinical Reasoning

4.1 Introduction
The majority of the published literature on clinical reasoning has been within the paradigms of cognitivism and probability mathematics, and this was reviewed in earlier chapters. This thesis adopts an interpretive approach to clinical reasoning, with an emphasis on the role of language. It is now time to turn to the relevant literature on language and clinical reasoning within the interpretive paradigm. The interpretive literature on clinical reasoning is much smaller in volume than that of the previous paradigms. Even so, it is a rapidly growing body of work. The interpretive paradigm is an umbrella term for a great variety of theoretical approaches. Therefore, this chapter focuses on the interpretive literature that emphasises the use of language in clinical reasoning. The main themes considered are interpretive approaches to expertise, narrative and metaphor, with some discussion of dialectics, dialogue, categories, and word meaning, and how these play their part in clinical reasoning.

4.2 Personal Anecdote
In developing their model of expertise, Dreyfus and Dreyfus (1996) recommended that readers reflect upon their own learning experiences to see if these experiences fit the model. Thus I begin by relating a brief incident from my experience to highlight the prejudices I bring to the review.

As a newly-qualified dentist, I spent some months working in the dental hospital where I had trained, building up clinical experience in an environment where I was expected to be independent but could call upon more expert help if needed. One of my tasks was to deal with the steady stream of casual patients who wandered in with toothache each morning and were referred to my clinic to have teeth extracted. Although not ideal dental care, by any means, it nevertheless provided relief from pain for people who were uninterested in seeking regular care and wanted immediate attention. After assessing each patient and confirming the diagnosis, I would administer a local anaesthetic and then extract the tooth...
(or teeth) required. When the bleeding had stopped the patient was discharged with appropriate postoperative instructions.

On one occasion, I checked the bleeding to find that a tooth socket was empty and was not filled by a well-formed blood clot, as was normal. This is essential if normal healing is to occur. On closer examination I was concerned to see what looked like the mucosa of the maxillary sinus just visible at the very end of the socket. The roots of maxillary teeth do occasionally have an intimate relationship to the maxillary sinus (the antrum). In these cases it is even more important to ensure good healing, otherwise an oro-antral fistula between sinus and mouth can develop, which is distressing to the patient, and needs an operation to repair. What was I to do?

I realised that the essence of the problem lay in the absence of a well-formed blood clot. So I took a dental probe and used the sharp point to scratch the bony walls of the socket until there was profuse bleeding, and then had the patient bite down on another gauze swab. A few minutes later I was reassured to see a well-formed blood clot completely filling the socket. The problem was explained to the patient who was then discharged (with instructions which included not to blow his nose hard for a few days). Reflecting on this incident some years later encourages me to accept the Dreyfus and Dreyfus model of expertise which is discussed next.

### 4.3 Expertise and Knowledge

This is a relatively straightforward incident, and most health care professionals with some years experience could relate similar tales. The reason this incident stayed in my memory is because it was one of the first occasions on which I came across a problem that was new to me, that I solved myself with a little thought, yet was not in any textbook. I faced a new situation which required reflection, however brief, and the application of clinical judgment to find a novel solution. This is an example of what Schön (1983, 1987) has described as reflection-in-action. Schön (1987, p. xi) defined this as:

> reflection-in-action (the “thinking what they are doing while they are doing it”) that practitioners sometimes bring to situations of uncertainty, uniqueness, and conflict.
Schön contrasted this kind of knowledge with technical rationality, which he described as the prevailing epistemology in professional schools, where propositional knowledge “knowing that” is held in high regard. Professional practice is traditionally assumed to be the direct application of propositional knowledge to problems of practice. However, as Schön pointed out, this is a naïve view, and the reality of professional practice is rather different. Well-formed problems that match textbook examples, as envisaged in the traditional approach, are relatively unusual. Professionals soon learn that individual variability is the norm, and that expertise lies in distinguishing the subtle variations between cases and knowing how to deal with them.

Schön (1987) pointed out that when a practitioner deals with such a situation the first issue is “problem-setting”. This means choosing and naming the things that will be noticed and the things that will be ignored, which he described as “naming and framing” (p. 4). The naming and framing process is essentially linguistic and depends on factors such as “disciplinary backgrounds, organizational roles, past histories, interests and political/economic perspectives”. Schön indicated that this process of problem-setting is also an ontological process. The professional is engaged in a localised and specialised form of world-making and world interpretation. From this point of view, professional practice is much more than the straightforward epistemology or knowledge framing and use espoused in the conventional view, which maintains that professional practice is simply an issue of acquiring and mastering a body of propositional knowledge and learning how to apply it. From the interpretive viewpoint, mastering and applying a body of knowledge are still important, but being a professional, such as a dentist or a physiotherapist, is much more. It is a way of being in the world.

This idea, of professionalism being strongly ontological, is echoed in the work of others, such as Thomas Kuhn (1996). Kuhn described how professionals (scientists in his case) live in the world, and perceive it, in a way that is radically different from non-professionals, and that this comes about because they have internalised a particular way of perceiving the world. A layperson might see lines on paper whereas a cartographer instantly perceives a terrain (Kuhn 1996, p. 111). Kuhn also wrote that when scientists undergo a paradigm shift, that is, a radical change in the sets of ideas and assumptions they use to perceive and conceptualise the world, they themselves talk of life after this experience as being like living in a new world.
Vygotsky (1978) noted that this internalisation of particular ways of perceiving the world is true of all humans, starting at an early age. He used the example of a clock. When we see a clock, we learn to perceive it instantly as a clock, not something round and black-cased with hands, which is then consciously and deliberately interpreted as being a clock. If there is interpretation it is instantaneous and unconscious. Shotter (2000) realised that professional ways of seeing the world are extensions of this. Professional socialisation shapes our attention in ways that makes us see things in particular ways. A layperson might see someone with a swollen face, whereas a dentist would see someone with an acute dental abscess; or, to be more precise, a dentist would see someone who had an acute dental abscess until proven otherwise. Shotter, following Vygotsky, maintained that it is through our language that this process occurs. These ways of responding to situations become embodied within us, and are therefore ontological rather than purely epistemological (i.e. words and knowledge). Professional ways of seeing the world are included among what Vygotsky (1978) described as higher mental functions.

Vygotsky (1978) distinguished higher mental functions from the lower mental functions which we share with animals. He claimed that higher mental functions, such as clinical reasoning, are qualitatively different from the lower, and cannot be reduced to them. We cannot interpret higher mental functions in terms appropriate to lower mental functions. Higher mental functions need a different conceptual framework, one that takes into account their cultural and historical nature. Unfortunately, the dominant cognitivist and behaviourist paradigms within fields such as professional and clinical reasoning are reductionist, and so have been unable to adequately conceptualise the issues involved in such higher mental functions. Schön (1987) addressed another aspect of this problem when he discussed the way that language, in the form of our terminology, has been used to close off inquiry. He contended that saying that outstanding practitioners have more wisdom, or talent, or artistry should be the point from which we can open up inquiry into the nature of these concepts. In fact, these terms are often used to bring inquiry to an end, as the concepts of artistry and talent, etc. do not fit within the domain of propositional knowledge. The cognitive paradigm is based upon a metaphor of THE MIND IS A

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1 According to Vygotsky, higher mental functions also included advanced craftwork, music and art. Playing a musical instrument or working with wood are examples of higher mental functions that can be derived through interaction with the object and oneself, and sometimes through interaction in the ZPD.
COMPUTER.² Concepts such as artistry, talent and wisdom have no place within this metaphor, and therefore become effectively invisible to those who think this way. Cognitivism admits knowledge in one form only, that of technical rationality.

However, there is a growing realisation that knowledge can be conceptualised in different ways. Wells (2000), taking a Vygotskian viewpoint, differentiated five types of knowledge: instrumental, procedural, substantive, aesthetic and theoretical. These form an ascending hierarchy of more and more sophisticated forms of knowledge. From this perspective, these different forms of knowledge have emerged over the course of human history due to the development of culture that requires people to engage in various activities which, in turn, make use of the artefacts used in those activities. Central to all these forms of knowing is language. As Halliday wrote, “language is the essential condition of knowing, the process by which experience becomes knowledge” (Halliday, 1993, p. 94). Maudsley and Strivens (2000) distinguished the following types of knowledge as being important for professional practice:

- Propositional knowledge – “knowing that” (the technical rationality of Schön (1987)).
- Process knowledge – “knowing how” (the problem solving expertise that is broadly similar to Schön’s reflection-in-action).
- Personal knowledge – derived from experiential learning.
- Moral principles or knowledge embedded in literature and the arts.

In recent years attempts have been made to conceptualise and study professional artistry and expertise in clinical reasoning which take into account these different forms of knowledge. One of the most notable contributions is the work of Patricia Benner and colleagues.

Benner (1984, 1996) used hermeneutic phenomenology to study levels of expertise as it was experienced by nurses at different stages of their careers. She made use of the levels of expertise model developed by Dreyfus and Dreyfus (1996), and produced some deep insights into expertise in clinical reasoning as experienced and practised by nurses. In developing their model, Dreyfus and Dreyfus based their arguments on a critique of

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² Numerous writers in the study of metaphor follow the convention of writing metaphors entirely in upper case. See for example the works of Lakoff and Johnson (1980) and Ortony (1993). This convention is followed here.
Greek philosophy, maintaining that misconceptions dating back to Socrates and Plato have bedevilled understanding of phenomena like clinical expertise up to the present day.

Socrates, in Plato’s *Euthyphro* (trans. 1993), believed that expertise was based on theory, and this idea was developed further in “*The Republic*” (trans. 1992) and extended, but much later, by Descartes (trans. 1999) and Kant (trans. 1998). A central notion is that theory is based on explicit, abstract, universal principles that are context-free, lawfully related, and independent of the interpretation or intuition of human beings. Plato contrasted this with everyday understanding that is implicit, concrete, local, and dependent on the interpretation of people. Ironically, medicine was held up by Socrates as an example of a model of the first kind of knowledge. His contemporary, Hippocrates, regarded as the father of modern medicine, claimed to have a theory that explained what doctors did. Socrates believed that the practice of physicians could be seen to follow logically from this theory. Unfortunately, according to Dreyfus and Dreyfus, according to Plato (trans. 1960) Socrates then overgeneralised this observation to claim that every practice must be the same and that practitioners must be able to articulate the underlying theory, and that intuition was not worthy of serious consideration. Plato (trans. 2003) suggested that one of the roles of the philosopher was to help practitioners, who could not articulate a theory of practice, to “remember” the principles on which they acted. However, Aristotle (trans. 2004) realised that intuition must play a role in some way and that there must come a point at which people use judgment to decide how and when to apply rules, even when a rich theory has been articulated to substantiate a practice. This is borne out, as discussed in a previous chapter, when it was demonstrated that expert systems, which use rules without judgment, cannot match the expertise of humans, reaching the level of good intermediate practitioners only. The Dreyfus brothers (1987), reflecting on Benner’s study (Benner 1984), concluded that the reason for this is that experts are experts because they have the details of thousands of cases that they have experienced at their fingertips, and that this practical knowledge is used in making judgments, not following rules.

However, Aristotle’s point seems to have been largely forgotten. This resulted in the assumption, prevailing for several centuries, that a beginner starts with specific cases and, with growing expertise, abstracts and internalises a more and more complex theory underlying them all. This assumption has achieved the status of a self-evident truth,
probably because it has been repeated frequently for a long time. As Dreyfus and Dreyfus (1996) contended, it may well be that skill develops in the opposite way, from abstract theory to particular cases. The Dreyfus brothers also rejected the view that the role of experience is to refine theory, and that better performance comes from better theory. As they pointed out, no plausible arguments have ever been offered that this is the case. It too is an assumption. Dreyfus and Dreyfus maintained that expertise in a health care profession like nursing is a complex mixture of theory and practice.

The Dreyfus and Dreyfus model (1996) contained five levels. They admitted that the model was not definitive, but claimed it was sufficient, and accepted that it would probably be refined. The five levels were as follows.

**Novice:** The instructor decomposes the task environment into context-free features which a beginner can easily recognise, and supplies rules for making decisions based on these features. For example, a dental student is taught how to identify dental caries\(^3\) in a tooth. Cavity preparation for a filling depends on a set of rules, based on the position and extent of the decay within a tooth, and the anatomy of that tooth. However, the students are not taught how to locate the mouth, as this is something they are assumed to have learned simply from living within their culture. Unfortunately, Dreyfus and Dreyfus subsequently discussed brain modification as a basis for this learning. This goes against the interpretive basis of their argument and introduces a reductionist element, implying that this type of learning might be a form of Pavlovian conditioned reflex. Approaches more in keeping with an interpretive paradigm would be to use Wittgenstein’s (1958) notions of forms of life and language games or the notions of communities of practice, based on Vygotsky’s work (Lave & Wenger, 1991). Health care professional students are being inducted into a new form of living or a subculture, with its own rules and its own language, and rules for using that language. In Schön’s terms this is the beginning stage of learning how to name and frame clinical problems. Vygotsky (1978) similarly wrote of people learning to perceive the world, not only through their eyes, but also through their speech.

**Advanced Beginner:** Students now consider more objective facts and learn more sophisticated rules. Intuition begins to become more important as they recognise

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\(^3\) Dental caries is tooth decay.
meaningful elements that might not be easily identified or articulated. Intuition does not mean wild guessing or some mysterious psychic ability. It is the straightforward ability to discriminate objects in the world and respond appropriately. My interpretation is that intuition is the embodied ability to name and frame things so easily that it feels completely natural and obvious to do so. At this stage, more and more elements become relevant and there can be a sense of being overwhelmed with all that can be considered to bear on any given situation.

**Competence:** Students recognise that many elements can be relevant, and to cope with this complexity they learn to adopt a hierarchical perspective. This allows them to prioritise. This too fits in with Schön’s notion of naming and framing, which allows decision making to become easier. The problem is that the vast number of subtle variations require variations in naming and framing. So possible plans have to be chosen under conditions of uncertainty, leading to emotional involvement which can lead the student to become much more personally connected with the practice. According to Dreyfus and Dreyfus this emotional involvement does not interfere with practice but sets the stage for further development of expertise.

**Proficient:** Intuitive behaviour becomes more prominent and students can usually recognise, without conscious thought, the aspects that are relevant in a situation. One simply sees what needs to be achieved. However, proficient performers still need to consciously decide what to do about the situation.

**Expert:** Here intuition becomes more pronounced. In their field, experts do not routinely solve problems and do not make decisions. They do what experience has shown normally works. Performance is much more unconscious. In Wittgenstein’s (1958) terms, experts have become completely immersed in the appropriate form of life and its language game. When we speak in our native language we do not normally think about the words we use and how to use them. Most people are experts in their native language. We think about the ideas we are trying to express, and the goals we are trying to achieve. Language use is then intuitive, and this is the distinguishing characteristic of experts. They may have to reflect on their practice if confronted with a difficult problem. However, when they do reflect, experts think not about the rules they use but the goals they want to achieve. Dreyfus and Dreyfus called this deliberative rationality. It can be argued that all these
different levels of expertise fit naturally within Vygotsky’s notion of the ZPD. As beginners progress they need less and less help to reach the level of the expert.

The Dreyfus and Dreyfus model of expertise can be compared and contrasted with other models, such as the model of clinical reasoning expertise proposed by Boshuizen and Schmidt (2000). There are strong parallels between the two models. However, Boshuizen and Schmidt used the discourse and terminology of cognitivism in their discussion. For example, they discussed “illness scripts”, a term which is derived from cognitive psychology. In the sense in which they used the notion of illness scripts it is clear that they meant much the same as cases in the Dreyfus and Dreyfus (1996) model. In my opinion, the assumptions of cognitivism, such as the mind being similar to a computer, are too constraining, and the clinical reasoning research that Boshuizen and Schmidt discussed would be more meaningful if discussed within a more interpretive discourse, such as that of Dreyfus and Dreyfus.

Benner (1984) used the Dreyfus model in her study of clinical reasoning in nursing. She largely confirmed the model, and showed that in nursing practice theoretical knowledge as well as intuition and practice experience helped to improve performance. In their discussion of the relationship between theory and intuition, it seems the Dreyfus brothers were describing a dialectical relationship between the two forms of knowing, even though they did not use the term. Boshuizen and Schmidt (2000) also seemed to be discussing a dialectical relationship between biomedical knowledge and the procedures for processing that knowledge. Similarly, Benner’s (1984) discussions reflect a dialectical relationship between theory and practice. An explicit dialectical approach may offer insights into the nature of clinical reasoning and expertise. Edwards (2001), using a grounded theory approach, concluded that there were at least two dialectics involved in the clinical reasoning of physiotherapists. One dialectical pair involves the cognitive processes required to diagnose a problem from a biomedical viewpoint and the cognitive processes required to understand a patient’s personal experience of the problem. A second dialectical pair concerns the individual and social aspects of practitioners’ learning. Edwards concluded that dialectics is a valid way to view the clinical reasoning of physiotherapists, and presumably this can be applied to all health care professionals.
4.4 Dialectics and Dialogism

Vygotsky was convinced that a dialectical approach could be used to provide a rich understanding of many psychological phenomena. Dialectics came to Vygotsky from Hegel via Marx.\(^4\) Dialectics is described in an earlier chapter. To summarise briefly, in a dialectical approach, an idea (a thesis) needs to be compared with an opposing idea (an antithesis) until a resolution (a synthesis) is achieved. It can be argued that a dialectical approach permits the complexity of clinical reasoning to be explored in its fullness, drawing out the tensions between the many factors that make up the phenomenon of clinical reasoning.

A concept closely related to dialectics is *dialogism*. This comes from Mikhail Bakhtin (1984, 1986) a Russian contemporary of Vygotsky.\(^5\) Bakhtin introduced the concept of dialogism (although he did not use this term), which is essentially a pragmatic form of epistemology. Its aim is to understand human behaviour through the use people make of language (Holquist, 2002). In Bakhtin’s view, dialogue is central to language and central to human identity. Reality is experienced through dialogue and not just perceived. Dialogism has, therefore, a distinctive phenomenological element to it. With this approach, human identity and consciousness is always defined in terms of its relation to the “other”. Even when we are thinking alone we are in dialogue with ourselves and using ideas that came from others. This dialogue with ourselves is what Vygotsky meant when he spoke of “inner speech”. For Bakhtin, the concept of dialogue was much richer than that of dialectics, of which he had a low opinion.

Dialogue and dialectics. Take a dialogue and remove the voices (the partitioning of voices), remove the intonations (emotional and individualizing ones), carve out abstract concepts and judgments from living words and responses, cram

\(^4\) Vygotsky was an ardent Marxist. However, his ideas are applicable across many political systems and cultures. The term *Marxist* is often avoided in modern Western texts when referring to his work, as it has too many negative connotations. The term *Marxian* is sometimes preferred.

\(^5\) It is not clear to what extent Bakhtin and Vygotsky knew of each other’s work. The two had much in common. Their ideas have considerable overlap, especially the notion of the centrality of language to human identity. Their personal lives also have certain similarities. They were born within a year of each other. The work of both Bakhtin and Vygotsky was suppressed in the Soviet Union for many years, and only rehabilitated and made available in the West during the last decades of the twentieth century. They are both regarded as geniuses. The work of both is hailed as being as refreshing and as relevant today as when it was first written. Vygotsky died young from tuberculosis while Bakhtin was banished to internal exile and officially ignored.
everything into one abstract consciousness -- and that’s how you get dialectics.
(Bakhtin, 1986, p. 147)

It is an assumption of dialectics that much of reality comes in binary opposites that are synthesised. Bakhtin decried this as too simplistic, rejecting the sense of closure that dialectical synthesis implies. According to Bakhtin, dialogue is multivocal and never reaches completion, in the sense that there is no end to the meaning that can be derived from dialogue as human interaction. All the interpretations we can make of an issue might be stated now, but other interpretations will be possible in the future and other valid interpretations were possible in the past. In the Bakhtinian world view there is no end to interpretation. Dialogism, therefore, has a strong hermeneutic element with an emphasis on meaning being derived from dynamic social relations. From a Bakhtinian position it is the relationship between things that is of primary interest. The “things” in question, whether they be individual humans, a person reading a text, or institutions interacting, derive their meaning from the relations, the intersubjectivity, that exists between them.

Bakhtin considered that the fundamental element in studying meaning in language was the utterance. This is in contrast to Vygotsky who saw word meaning as fundamental. Vygotsky’s use of words as a basic building block of meaning has been criticised as a weakness in his theories, as he relied on an individualistic account of word meaning, which contradicted his social theory of cognition (Williams, 1999). Vygotsky used the notions of sense and reference to explain word meaning. To illustrate this, Williams (p. 273) used the classic example of “The Morning Star” and the “The Evening Star”. Both have the same referent, the planet Venus, but have quite different senses. Sense and reference can be useful concepts, but leave us with the questions of how a word comes to refer to an object, as opposed to being merely associated with it, and how we might learn this. The usual response to these questions is that people define the words in this way, by an act of ostensive definition. However, this presumes that we begin with the intellectual ability and a range of concepts that would enable us to do so. The problem is that the ability to ostensively define objects in this way is a relatively high level intellectual ability, and does not explain how we acquire the ability to begin with. One of Vygotsky’s concerns was to explore how such high level abilities were acquired, and he did not believe that they were innate. Vygotsky did not live long enough to resolve this weakness. However, as Wittgenstein (1958) discovered, words change their meaning
according to the context of their use in social situations, which he discussed in terms of “forms of life” and their associated “language games”. Williams discussed this issue at length and concluded that Vygotsky’s ideas on social cognition, while sound, would be more robust if combined with Wittgenstein’s ideas on word meaning, which have a social basis. Bakhtin’s notions of the utterance and dialogue appear to do this. They combine a social theory of cognition with a social theory of meaning.

An utterance can be as short as a single word or as long as a treatise. Whereas much philosophy of language focuses on language in the abstract, Bakhtin’s emphasis on the utterance makes his study both dynamic and concrete, focusing on active, speaking subjects in real circumstances, lending itself to empirical research (e.g. Moro, 1999). The utterance is always contextual. The utterance is always: “oriented towards an addressee, toward who that addressee might be” (Bakhtin/Volosinov, 1986, p. 85). The meaning of an utterance is at least two-sided. Its meaning is “determined equally by whose word (utterance) it is and for whom it is meant” (p. 86). Utterances are also characterised by what is called addressivity, which is the “quality of being directed to someone” (p. 95).

Addressivity is clearly seen in Vygotsky’s discussion of the dynamics of word meaning but might be better conceptualised within the notion of a Bakhtinian utterance. Vygotsky, like Wittgenstein, was anxious to demonstrate that the prevailing, static, representational theory of word meaning is inadequate. Vygotsky took an example from literature, Dostoyevsky’s (1954) “Diary of a Writer”, in which the narrator overhears six drunks each utter the same expletive, one after the other, and each means something completely different, but all understand each other. Although this is a fictional example, it is clear that different meanings of the one word are contingent upon the context and addressivity. A better example of the way in which the various meanings of an utterance can interact and influence each other is the following, allegedly real incident, in which a Bedouin host is exchanging pleasantries with an honoured European visitor.

“And do you like our place here in Wadi Safra?”

“Well; but it is far from Damascus.” (Lawrence, 1926, p. 92)

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6 There is an ongoing debate about the authorship of work produced within the so-called Bakhtin circle. Some argue that the works of Bakhtin’s colleagues Medvedev and Volosinov were largely authored by Bakhtin himself (see Holquist, 2000).
Superficially, this seems to be nothing more than a polite exchange. However, as
the passage continues it is quite clear that this exchange, especially the word
“Damascus”, has several layers of meaning for the bystanders.

The word had fallen like a sword in their midst. There was a quiver. Then
everybody present stiffened where he sat, and held his breath for a silent
minute. Some, perhaps, were dreaming of far off success: others may have thought it a reflection on their late defeat. (p. 92)

The European visitor is T. E. Lawrence, better known as Lawrence of Arabia, who is trying to organise the Arabs into an effective fighting force against the Turks, during the First World War. In this context, his reply is deliberately provocative, but we need the context to appreciate the subtlety and the several layers of meaning that are invoked.

In conclusion, the ideas discussed above, of dialectics, dialogue and dynamic social approaches to meaning and cognition offer a rich theoretical perspective from which to explore clinical reasoning. It is an important assumption of this research that human activities, such as clinical reasoning, take place in cultural contexts, are mediated by language and other symbol systems, and can be best understood when investigated in their historical development. The literature reveals that there is a growing number of scholars who are calling for these ideas to be applied, and there are a number of studies that attempt to do so. Leiman (2000) made the case for applying Bakhtinian ideas to the study of psychotherapy. Harden (2000), a feminist researcher, advocated the use of Bakhtin’s ideas to analyse women’s accounts of their experience in becoming nurses, to provide a rich interpretation of that experience. Bowers and Moore (1997) found that these same ideas allowed nursing researchers to articulate more fully the ways of knowing in nursing practice. All these writers also recognised the importance of studying another aspect of language use as part of this kind of research. That aspect is narrative. Bowers and Moore (p. 71) realised that “every narrative represents an interplay of consciousnesses”.

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4.5 Narrative and Clinical Reasoning

An assumption of this thesis is that clinical reasoning can be seen as the construction of a narrative about or with a patient. Hurwitz (2000, p. 2086) defined narrative as “a pattern of events placed in an order of sorts, involving a succession of occurrences or recounted experiences from which a chronological sequence may be inferred”. He further asserted that the crucial feature is “and then”. In other words, the events and characters in a narrative are meaningfully linked and derive their meaning from the relationships between them. Frid et al. (2000) distinguished between narratives and stories. They explained that narrative is an account experienced by the narrator, while a story is recounted by someone other than the narrator. However, they conceded that the two tend to be used interchangeably. My interpretation of the way these words are used in the literature is that, while interchangeable use is now common, narrative has tended to be used as a generic term and stories are specific instances of narrative.

Narratives in the field of health care tend to be of two types which overlap to some extent. There are the stories told by patients about themselves and the stories health care professionals tell, both about patients but also about themselves. The stories that patients tell about themselves are eloquently summarised in Frank’s (1995) work which arose out of his own experience of cancer. Frank discussed various aspects of patient narratives, such as the need of ill people, especially the chronically ill, to tell their stories in order to construct new maps and new perceptions of their relationships to the world. These stories are embodied, told through the body as well as about it, and they are also told in particular social contexts.

Pennebaker (2000) was surprised in an experimental study to discover the considerable benefit that accrued to people who were able to write stories about traumatic events in their lives. Putting distress into language in this way seemed to give people the capability to “move on”. He speculated that “good” narratives are beneficial because they tend to make complex experiences simpler and more understandable. However, the process of narrativisation also seems to distort memory to some extent. Heliker (1999) used a phenomenological approach to study the effects of both story-telling and story listening, and found that quality of care in a long term facility was improved through these activities. These papers are mostly concerned with patients’ narratives.
However, patients’ narratives overlap with professionals’ narratives, as the professionals become players in patients’ narratives.

Health professionals can change the narrative trajectory of their patients (Verghese, 2001) and health professionals can also become the spokesperson for the disease, as Frank suggested (1995). Verghese (2001) used a historical example from the biography of Chekhov, who was both writer and physician, to show how doctors are both storymakers and storytellers. Verghese found that when doctors are encouraged to construct stories about their own work they are encouraged to reflect deeply on what they do and the relationships they have with patients. He discussed the extent to which an appreciation of the narrative aspect of medical practice can enrich practice and improve patient care. Towards this end, a number of writers have attempted to draw the attention of health professionals to the relationship between literature and medicine as a narrative practice. This is seen by some as important enough to be a formal part of medical education.

Skelton et al. (2000), for instance, discussed the advantages of including the study of literature as a formal part of a medical course. The argument was that it is important for medical students to learn that the narratives they obtain from their patients are similar to narratives in literature, as literature seeks to say many things at the same time. Skelton et al. believed that the study of literature could provide health professionals with the conceptual tools to cope with ambiguity and multi-layered meaning. This was echoed by Charon (2000a), who examined the historical connections between literature and medicine. She argued that the growing interest in the field of medical humanities, together with the increasing number of medical schools that include a formal course in literature and medicine, might mark the end of the reductionist trend in medicine, as health professionals become more aware of the power of words. She argued that a literary critic acts as a diagnostic instrument for a text, transforming its meaning, and that the meaning is often beyond what the words superficially say. Her contention was that a medical practitioner is similar to a literary critic. The various texts of medicine can be interpreted to reveal more than the sum of the meanings of individual words. Literature and medicine share similar goals and similar methods.
In another paper, Charon (2000c) described the explicit goals of including a study of literature in the medical curriculum. They were that the study of literature:

- can help doctors to understand what happens in patients’ lives
- increases narrative competence
- develops skills in accurately interpreting the texts of medicine
- can help to develop empathy
- can help doctors to develop the capacity for self-knowledge and reflection.

Charon (2000c) argued that the actions of diagnosing, prognosing, and choosing fitting and ethical management are, to a large extent, textual and interpretive actions. Therefore, a competent doctor needs to make sense of the complex narratives of medicine and understand the multiple meanings associated with human actions. In another study, Charon (2000b) gave examples of how she applied a narrative approach in patient care. By reading case notes and files as if they were novels, she claimed that this allowed her to discover underlying meaning, revealing patterns and movements in her patients’ lives and how their lives connected with her own. In yet another paper (Charon, 2001) she gave further examples of patient care based on narrative medicine, and discussed the narrative approach in terms that are highly dialogical, although she did not mention Bakhtin. For example, she wrote that the meaning of a narrative must be judged in terms of its context. Who tells the narrative? Who hears it? Why and how is it told? She also stated, “the meaning of a text arises from the ground between the writer and the reader “ (p. 1899). This is the language of Bakhtin’s dialogism, where meaning comes from the relations between people, and between people and their texts. Charon also explored the ways in which a narrative medicine can enrich several dimensions of a doctor’s life. Not only can the patient-doctor relationship be enhanced, but, she argued, so too can enhanced relationships be developed between doctors and other doctors, and between doctors and the larger society. Similarly the relationships doctors have with themselves can be enhanced. This latter is another idea with Bakhtinian connotations.

The importance of literature and narrative in medicine was also discussed by Hunter (1996b). She used terms strongly reminiscent of Vygotsky in writing that narrative truths are “derived from narrators whose standpoints are always situated, particular and uncertain, but open to comparison and reinterpretation” (p. 303). Hunter also argued that
narrative knowing is the method by which communities of practice, like the medical profession, build a sense of professional community, because we are narrative beings and take this way of knowing for granted. It can be argued that because this way of knowing is so intuitive and natural for us it is also difficult for us to see it and even to recognise that it is occurring. Helping us to see that narrative knowing is occurring is, in large part, what Wittgenstein tried to do in his later work (Wittgenstein, 1958). He wanted to make explicit what is implicit in our use of language.

The aspects of things that are most important for us are hidden because of their simplicity and familiarity. (One is unable to notice something – because it is always before one’s eyes.) The real foundations of his enquiry do not strike a man at all. Unless that fact has at some time struck him. – And this means: we fail to be struck by what, once seen, is most striking and most powerful. (Wittgenstein, 1958, #129)

Hunter (1996b) also discussed narrative knowing in medicine in terms of Aristotle’s phronesis, which coincides with Schön’s practical knowing, arguing that narrative is essential to practical reasoning. Hunter took an explicitly hermeneutic approach to narrative knowing (Hunter, 1991). She contended that when a doctor builds the patient’s narrative there is a constant movement from part to whole and back again. The parts can be as varied as responses to questions, information gathered from a physical examination, and special tests such as radiographs, as well as pre-existing information in patient’s files.

Hunter’s work reflects the notions of Vygotskian dialectics. Dialectics in Hunter’s work can be seen in her discussion of the use doctors make of contradictory maxims when trying to formulate a patient’s problems (Hunter, 1996a). For example, the title of her paper discussing this issue includes part of the maxim: “When you hear hoofbeats don’t think of zebras” (p. 225). The overt intention here is to discourage novices from picking out rare and exotic diagnoses over commonly occurring ones. However, as Hunter pointed out, the mention of zebras means that one is forced to think of zebras, and this reveals another less obvious intention of this maxim, which is to encourage novices to think of the rare diagnoses, but keep them in the background, so that they are not missed. Medicine, Hunter wrote, is replete with such maxims. They include: “Listen to the patient. They are telling you the diagnosis”, but this is contradicted by the maxim that
nothing “is more suspect than a fact reported by a patient” (p. 226). Hunter’s interpretation was that medicine is an essentially hermeneutic exercise and that the maxims guide and test the hermeneutic task of constructing the patient’s narrative. Although Hunter did not discuss the issue in dialectical terms, these maxims can also be seen as dialectical pairs in tension. Competent medical practice comes from their synthesis. An aspect of expertise is being able to know when to apply a particular maxim and when to apply its opposite, and this can only come with experience of many cases. Diseases, Hunter suggested, are best thought of not as objects but as narrative plots unfolding over time. The narrative is also a joint construction between doctor and patient.

Brody (1994) discussed the implications of this joint construction of narrative. He argued that poorly used, a narrative approach could descend into being a mere tool to be picked up when no technical fixes are available, thus becoming little more than good bedside manner. A more serious critique came from Atkinson (1997) who applauded the narrative turn, endorsing it as a valid and useful means of conducting qualitative research in the sociology of medicine. However, he was severely critical of much of the seminal research done in the field, including that of Frank (1995) referred to above. Atkinson complained that narratives should not be treated as transparent and privileged accounts of people’s inner selves. He argued that narratives are as constructed as any other form of sociological data and need rigorous interpretation. He accused writers such as Frank and also Kleinman (1988) of adopting a therapeutic and romantic stance towards narrative rather than an analytical stance. Atkinson claimed that these writers were attempting narrative analysis without due consideration for the social factors that helped produce the narratives, that is the social contexts and interactions in which they are set. Such writers seemed to privilege the individual over the social, and to regard narrative as an occasion for individuals to achieve some form of authenticity. However, in response, it could be argued that researchers working within a critical paradigm would see research that aimed to give a voice to patients and to liberate people from oppressive social relations as being entirely valid and acceptable. Atkinson insisted that proper narrative analysis must pay serious attention to narrative formats and to the place of narratives in the contexts in which they are produced and used. This kind of focus allows the construction and deployment of narrative to be seen as a moral act in which doctors make their work visible to each other and render themselves morally accountable.
However, used properly, narrative has an ontological function that can enable doctors to develop into truly caring people, for whom patients’ suffering rather than the doctor’s private agenda is the primary focus. Other writers such as Charon (2001) and Greenhalgh and Hurwitz (1998) have confirmed this contention from first hand experience. According to Brody (1994), a narrative physician knows when objective detachment is necessary and comforting to a patient and when compassionate vulnerability is required. I can confirm this, to a limited extent, from my own experience. The patients mentioned in the personal anecdote at the start of the chapter wanted a quick technical fix to solve an acute problem. They welcomed a compassionate manner, but it did not appear to be their top priority. What they appeared to value above all was technical expertise that would allow them to be relieved of pain as quickly and painlessly as possible. However, I have also seen patients with chronic orofacial pain conditions. Merely listening to these people in a compassionate manner, giving them time to tell their stories, and showing that you were trying to understand what they were living through seemed to be therapeutic in itself. They needed what Kleinman (1988) called empathic witnessing. It seems clear that health care professionals need to acquire the skills to apply different approaches and the judgment to know when to apply them. This is perhaps a point at which technical medicine, seen as purely scientific, meets a more narrative based approach.

Greenhalgh (1999) discussed the ways in which narrative medicine could be combined with modern scientific trends such as the evidence-based medicine (EBM) movement. She saw them not as necessarily contradictory but as complementary. EBM is used to study populations, but narratives refer to individual cases. Greenhalgh made the thoroughly sensible proposition that both kinds of knowledge are needed in modern medical practice. She appeared to be asserting a dialectical/dialogical approach to combining EBM and narrative.

Greenhalgh (1999) cited an example, apparently taken from real life, in which a general medical practitioner was given a message from the receptionist. A regular patient, the mother of a small child, called to say that the child had diarrhoea and was behaving strangely. The doctor knew the family well and was sufficiently concerned to make an immediate visit, which led to a diagnosis of meningitis and the institution of life-saving therapy. Greenhalgh’s interpretation of this remarkable feat was that the doctor judiciously integrated his knowledge of best practice with his narrative knowledge of the
family. Like Hunter (1996a), Greenhalgh referred to contradictory maxims that could have been considered in these circumstances, such as “diarrhoea in previously well children is generally viral and self-limiting” and “meningococcal meningitis presents non-specifically in primary care” (Greenhalgh, 1999, p. 324). She suspected that the vital clue for the doctor in this case was the phrase “behaving strangely” which, in this context, was an unusual expression for describing a sick child. Most parents from the social background concerned would be more likely to use a term like “off-colour” to describe a routine childhood illness. This seems to be an example where the language used was so unusual for the context that it really made a difference between life and death.

Greenhalgh discussed the diagnostic encounter as being an occasion in which a number of separate secondary texts are integrated into one narrative. She described these secondary texts as:

- the experiential text – the meaning patients assign to their problems
- the narrative text – the medical history and its interpretation by the doctor
- the physical text – what the physical examination reveals
- the instrumental text – information from special tests like radiographs.

Greenhalgh contended that special tests like radiographs, biopsies, and blood tests can rarely be interpreted in isolation. They need an accompanying medical and social history if they are to be interpreted adequately. This is consistent with Hunter’s (1991) notion of medicine as a hermeneutic practice. Each text is a part that needs to be integrated into a narrative whole. Greenhalgh also seemed to attempt a link of narrative with cognitive psychology. She referred to “illness scripts” (Greenhalgh, 1999, p. 318), a term that carries connotations of the scripts of cognitivism, reviewed in an earlier chapter.

However, in my opinion the illness scripts of cognitivism are far too narrow, rigid and reductionist to be considered synonymous with the rich, multidimensional notion that is narrative. As expressed previously, I believe that rather than integrating cognitivism with narrative, we should be promoting a Kuhnian paradigm shift to new forms of psychology which are more cultural, narrative and discursive, and integrating them into professional health care. Numerous scholars have been formulating and advocating these alternatives to cognitivism in recent decades (Bruner, 1987, 1992, 1997; Cole & Wertsch, 1996; Gergen, 1999; Harré & Gillett, 1994). The literature on narrative in medicine has tended
to focus on patient narratives and there has been less emphasis on the narratives doctors construct, an area where more work is needed.

Hunter (1991) provided an extensive study that examined and discussed doctors’ narratives, especially the narratives they tell to each other, when the patient may be absent. These take many forms. There are the stories told in daily rounds, usually from juniors to seniors, and settings such as grand rounds, clinicopathological conferences, as well as the entries that go into case notes and reports. Especially noteworthy to Hunter was the degree of formality in these forms of medical narrative. Written entries, from daily observations in case notes all the way to official reports, had distinctive formats, and the doctors expected to see these formats. In oral presentations, which constitute a large part of the work in a hospital, she was particularly struck by the ritual nature of such encounters, from daily informal ward rounds through to more formal grand round presentations. High value was placed upon achieving the correct degree of formality within the narrative forms that doctors exchanged with each other. This is a reflection both of the valuing of objectivity in the medical model and of the social rules of hierarchy and professionalism in medicine.

Attention to the formality and ritual nature of medical narrative is echoed in the work of Atkinson (1995). He drew attention to the ways in which ritual and formality were used in the settings in which haematologists laboured to achieve the work of medicine. The world of medicine relies heavily upon these formal ways of using language, in clinics, laboratories, case conferences and in the wards. These formal ways, according to Atkinson, are culturally prescribed devices which afford stability and predictability to medical practice. Atkinson also drew attention to the extent to which rhetoric played a role in the construction of medical narrative. Rhetorical forms established authority and attitudes to knowledge and uncertainty. Atkinson also complained about oversimplistic approaches to the analysis of clinical reasoning and medical work. He suggested that approaches as varied as decision making algorithms and micro-economic models were likely to founder because they failed to take into account the sheer complexity of clinical work and thought. He asserted, and I would agree, that the best way to grasp the health-related issues of a particular patient’s situation/narrative was via a “linguistically informed phenomenology” (p. 151). Atkinson also provided empirical evidence for Schön’s (1983) ideas with his discovery that the haematologists in his study expressed
their expertise in practical action, and that this expertise was also an emergent property of interaction between colleagues. He called, therefore, for a sociology of medical knowledge to match the flourishing sociology of scientific knowledge.

Atkinson (1995) was critical of the extent to which empirical studies have focused upon patient/doctor encounters. Although recognising the importance of patient/doctor interaction, Atkinson called for more attention to empirical studies of doctor/doctor interaction. He argued that, in an age of increasing specialisation, more and more of the narrative work of doctors takes place away from the patients as they jointly construct narratives about patients. There is an increasingly complex distribution of knowledge and expertise. Medical knowledge grows in volume and sophistication and it is becoming increasingly difficult for any one person to know all that needs to be known to manage some of the complex problems that modern patients present with. It can be argued that joint construction of medical narratives can only be expected to grow in the future, and therefore there is an increasing need to study how this happens. This, of course, is a major thrust of this research project. There are now studies starting to explore how doctors jointly construct patient narratives, a good example of which is Mol’s ethnographic work on atherosclerosis (Mol, 2002).

The majority of the literature discussed so far has been from within medicine. However, a growing body of literature is appearing that adopts an interpretive approach to the examination of clinical reasoning in other health care professions. For example, Higgs and Jones (2000) edited a book that brought together views on clinical reasoning in various professions. In this book clinical reasoning was interpreted through the experiences of key thinkers (practitioners, educators and researchers) in different professions including medicine, nursing, physiotherapy, occupational therapy and others. A good example of a narrative approach to clinical reasoning in other health care professions has been demonstrated by Mattingly (1994).

Mattingly (1994) studied, at length, the work of occupational therapists. In contrast to the focus of doctors, for occupational therapists diagnosis as such is not a key issue. Diagnosis has often been established before occupational therapists begin their work. Their goals are to rehabilitate people, but only if the patients are willing to cooperate. Mattingly introduced the notion of “therapeutic emplotment”, providing a detailed
example of how this was seen in the clinic setting. She described an occupational therapist taking a new patient for a tour around a rehabilitation facility, showing him where various activities would take place. It is clear from Mattingly’s analysis that the therapist’s talk was attempting to lay down a new narrative foundation for the patient. A young, previously able-bodied person now had to learn to live the rest of his life in a disabled state. This meant working out and living a new narrative, and the therapist clearly attempted to provide the beginnings of a narrative in which the patient had a meaningful life and coped with his disabilities. In other words, the therapist provided the plot that the new narrative might follow – if the patient accepted it. Mattingly argued that without this larger therapeutic story the clinical encounters of rehabilitation would become meaningless, and patients (and presumably staff) would see little purpose in engaging in therapy at all. Mattingly recognised the strong phenomenological element in the narrative approach. Phenomenology studies how people experience the world. Mattingly’s point was that the narratives we tell and live out provide a shape and meaning to that experience. However, as we see next, establishing a coherent narrative is not always easy.

4.6 Categories and Categorisation in Clinical Reasoning

At this point we can briefly consider categories in clinical reasoning. These too are an aspect of language use. Much of the literature on categories in clinical reasoning is based on a cognitivist view and includes rigid concepts such as prototypes and exemplars. This has been discussed in a previous chapter and has also been summarised by Hayes and Adam (2000). However, it is of interest how categories arise. Much of the cognitivist literature seems to assume that categories exist in nature, awaiting our discovery. There is no sense that categories are constructed by communities of people who are attempting to achieve some purpose, such as relieving suffering and improving health. Wittgenstein (1958) pointed out that notions such as categories have roles within particular language games, and arise as functions of language. As functions of particular language games, such as clinical reasoning, it is the practice of using the language game that determines how categories are defined and how they are related to each other. Wittgenstein also pointed out that, because of the flexibility of language games, we cannot assume that

7 This assumes that patients see their impairment as a disability. Some impaired people are entirely happy with their new lives and find them fulfilling. It would seem that in these cases the patients have worked out an acceptable new narrative for themselves.
there must be distinguishing features of things that can be used to assign them to one
category or another. He used the notion of “family resemblances” to illustrate the fact that
people, for example, might have a number of features that can be used to group them
together, without any one feature being able to distinguish them all. This means that we
are ill-advised to look for rigid categories or systems of categories in clinical reasoning.
We need to examine the language game within which any category makes sense, and how
that language game works in practice. Within the context of the language game of clinical
reasoning, categories are constructed by a community of practice called a health care
profession, or by the larger grouping of a health care environment or system, and then
used by individual health care professionals to construct narratives about patients.

Composing a patient’s narrative can sometimes be difficult, due to the multiplicity of
problems (and categories) that can emerge, many of which may appear to have no logical
connection to each other. For example, Marinker (1998) discussed the almost
overwhelming task confronting a doctor who had to cope with “Hilda Thomson” (the
pseudonym for the patient he described). Marinker began by referring to Foucault’s
(1970) quotation from an ancient Chinese encyclopaedia\(^8\) in which animals were divided
into the following categories: (a) belonging to the Emperor, (b) embalmed, (c) tame, (d)
sucking pigs, (e) sirens,\(^9\) (f) fabulous, (g) stray dogs, (h) included in the present
classification, (i) frenzied, (j) innumerable, (k) drawn with a very fine camelhair brush, (l)
others, (m) having just broken the water pitcher, (n) that from a long way off look like
flies.

\(^8\) In an essay “The Analytical Language of John Wilkins”, Borges (1966) attributed the original reference to
Franz Kuhn who apparently discovered the “Celestial Emporium of Benevolent Knowledge”. Bryant (2000)
speculated that the encyclopaedia may never have existed, as Borges was renowned for his vivid
imagination. Whatever the truth of this, Borges used the Chinese encyclopaedia extract to make the
perceptive point that “there is obviously no classification of the universe that is not arbitrary and
conjectural. The reason is very simple: we do not know what the universe is”. Foucault used the extract to
make the point that for the people of that particular time, place and culture, the categorisation scheme may
have made perfect sense.

\(^9\) Another point of interest is the effect of translation and how this can change meaning. In the original
Spanish, Borges used “sirenas”, which is generally translated as “mermaids”. Marinker, following Foucault,
who presumably used a French translation, used the word “sirens”. Sirens and mermaids are sometimes
used synonymously, but can have different significance. In folklore, mermaids were generally regarded as
benign, or at least indifferent to human concerns, whereas sirens were malign. In Homer’s Odyssey the
sirens used their songs to lure sailors to their death.
As Marinker pointed out, to modern Western ears the classification is extremely bizarre. It is difficult for us to make sense of it or see how it could be sensibly used in any way.

Marinker explained that some patients can present with a set of problems that seem just as bizarre and nonsensical. The patient Marinker described had just such a collection of troubles. Among other problems, she had rheumatoid arthritis, chronic pain, a husband who was competing with her for the sick role and a failing business. To devise a therapeutic narrative that could cope with a collection like this is difficult in the extreme. Marinker did not offer any solutions beyond raising awareness, but others have tried this.

Engel (1977) recognised the inadequacy of the prevailing biomedical model in health care for dealing with the multiplicity of problems that present in chronic illness and cases such as Marinker’s “Hilda Thomson”. Chronic illness has a tendency to produce sets of problems in people’s lives that are as varied and complex as that of Marinker’s example. Simply focusing on the biomedical problems to the exclusion of all the related troubles leads to failure and frustration for both patients and staff. Engel called for a change to the biopsychosocial model, which has a greater capacity to integrate the many different problems of people like “Hilda Thomson”. The growing number of multidisciplinary pain clinics around the world is a testament to the attempt to implement this model of health care that utilises the expertise of different health care professions in a coordinated manner.

The degree to which attempts to implement Engel’s biopsychosocial model have been successful is debatable. A major problem is that, in general, health care professionals have been trained to practise within an acute biomedical model, with all its attendant assumptions and its own set of categories with which to classify health problems, and it can be difficult to reform these. These assumptions and categories seem to be built into the language games, the narrative forms, the rhetoric, that health care professionals use, and that to some extent shape their thinking.
A common example of this is the modern division of the human person into two parts, the mind and the body, which has permeated Western medical and lay thinking at least since the time of Descartes, three hundred years ago. Ryle\textsuperscript{10} (1949) devoted a book to discussing and refuting mind/body dualism. He described the fundamental error as being a category mistake, in which ways of speaking that are appropriate in certain contexts become inappropriate in others, and that this feature goes largely unrecognised. He gave many examples. One is that of a foreigner visiting Oxford University for the first time and being conducted around the various colleges, departments, libraries and museums, etc. After this, the visitor asks, “But where is the university?” (Ryle, 1949, p. 18). The error is that the visitor believes the university to be another instance of the buildings he has seen, and does not realise that it is made up of all the things he has just been shown. Ryle maintained that this is exactly the kind of error that occurs in mind/body dualism.

It can be argued that modern cognitive psychology has arisen in large part as the means to explain the mechanics of the mind in much the same way that physiology attempts to explain the mechanics of the body. Ryle did not refute the fact that mental processes (such as clinical reasoning) occur, but argued that the ways of talking and therefore thinking about the mind in modern Western culture were largely inappropriate and led to great confusion. The mind is included in the same cultural and linguistic category as the body, where it does not belong. This is not to restate Cartesian dualism. The mind can be understood in a number of different ways. For example, from a Bakhtinian perspective the mind can be seen as a function of our social interactions. The mind is as much intersubjective as it is subjective. Revealing the extent of category errors and their pervasiveness also preoccupied Wittgenstein in his later years, and he too devoted much of his work to trying to explicate them. For example, Wittgenstein wrote, “We predicate of the thing what lies in the method of representing it” (1958, #104). In other words, people confuse symbols and the entities they refer to. The “ghost in the machine” that Ryle contested has, since the time of Descartes, become for many people in Western society a reality in which they believe.

\textsuperscript{10} Ryle coined the expression “ghost in the machine” to denote the concept of the mind inhabiting the body as a mysterious entity which mind/body dualism would require.
Lakoff (1987)\textsuperscript{11} took up this issue and discussed reasons for the difficulties in overcoming these category mistakes. Lakoff considered the notion of linguistic relativity. This construct is generally attributed to Edward Sapir (1949) and his student, Benjamin Lee Whorf (Carroll, 1956), who articulated what is now called the Sapir-Whorf hypothesis.

The Sapir-Whorf hypothesis has been the subject of debate ever since it first came to prominence in the middle of the twentieth century (Cooper & Spolsky, 1991). Essentially, it states that the structure and lexicon of a language influence, or even determine, how a person perceives and conceptualises the world. There are different versions of linguistic relativity, and these are generally divided into strong and weak versions. According to the strong version, language completely determines and constrains thought. This claim is widely dismissed because in its most extreme form it seems to imply that it would not be possible to learn a second language. However, according to the weak version the structure of language has some constraining influence on thought. This is more widely accepted, and current debates are concerned with the degree to which this occurs and the mechanisms by which it might happen.

John-Steiner (1991) discussed the Sapir-Whorf hypothesis in relation to Vygotsky’s work, and drew some strong parallels. Vygotsky believed that while thought and language were interdependent, cognitive activity was essentially linguistic. “Thought is not merely expressed in words: it comes into existence through them” (Vygotsky, 1986, p. 218). Wittgenstein (1921/1961, #5.6) was of the same opinion: “The limits of my language mean the limits of my world.”. Vygotsky also raised the issue of other symbol systems that can carry meaning, such as mathematical notation and pictures. These can all be cognitive tools for thought. John-Steiner (1991) reviewed investigations of the way scientists and mathematicians thought through problems, which revealed that higher level mental abilities can utilise multiple internal codes for problem-solving. The claim was made that a good notation system can effectively increase mental power by setting the mind free to concentrate on advanced problems.

\textsuperscript{11} The title of Lakoff’s 1987 book “Women, Fire and Dangerous Things” is another example of what is, to Western ears, a bizarre categorisation system. It is taken from Dyirbal, an aboriginal language of northern Australia. However, Lakoff analysed the Dyirbal categorisation system at length and showed that in its cultural context it is not nearly as sexist as it may first appear.
This is certainly an implication of Vygotsky’s ideas. Mastering a notation system allows us to make some cognitive functions automatic, which we can then use “thoughtlessly”. For example, once we have mastered the ability to read in a language, we can more easily concentrate on the ideas being communicated rather than working out the meaning of individual words. It is clear from Vygotsky’s writing that language performs an integrative function. Other symbol systems and cognitive tools can have meaning because they are imbued with language and integrated within it. In the realm of clinical reasoning there are many symbol systems. These can include ECG traces, manual therapy symbols, dental notation, radiographs and MRI scans. Language, in Vygotsky’s view, is the “tool of tools” (Cole & Wertsch, 1996). If this is true of scientists and mathematicians then it seems reasonable to assume it is true of health care professionals engaged in clinical reasoning. Benner’s (1984) work on expertise in nursing would appear to be in keeping with this notion. For example, Benner found that experts focused on the goals to be achieved. The cognitive procedures and techniques of achieving them were automatically performed and used without conscious thought.

It is clear that the Sapir-Whorf hypothesis remains controversial. My preference is to agree with Lakoff (1987), like Whorf, that language has a strong influence on conceptual systems and that differences in conceptual systems can affect understanding and behaviour in significant ways. Exactly how this happens, and to what extent, varies depending on many things, such as context. It also seems clear that much of our conceptual system is used unconsciously and automatically in ways that pass unnoticed, because they are so natural and automatic. In this study I assume that clinical reasoning is an example of this, and that the language and category systems used are not an outcome of clinical reasoning, but that language is, to a large extent, formative of categories and clinical reasoning.12

4.7 Metaphor
An important idea that has stimulated much interest in recent years, including the realm of clinical reasoning, concerns the underlying metaphors that exist in all our language

12 Vygotsky believed that language was constitutive of activity and that the “egotistical speech” of children talking their way through an action was not peripheral but central to the acquisition of mastery of skilled action. The implication is that as adults we still learn by talking ourselves through new activity but do so silently.
use. In the final section of this chapter I provide a brief overview of the literature on metaphor, cognition and language, and its relation to clinical reasoning. Metaphor is generally regarded as an embellishment of language, something used by poets and writers as a rhetorical flourish, and slightly unconventional. Metaphor is also generally considered to be a feature of language alone, having little to do with everyday thoughts and actions. However, in recent decades a growing number of scholars are now of the opinion that metaphor is pervasive in language and that our conceptual systems are fundamentally metaphorical in nature (Kovecses, 2002; Lakoff & Johnson, 1980; Ortony, 1993). In other words, the ways in which we think, act, and interpret our experience are profoundly metaphorical. Lakoff and Johnson (1980) gave a number of examples of ways in which our everyday language is founded on metaphor, making the point that metaphors arise from our embodied existence and the cultures in which we live.

There is now a growing body of literature on the role of metaphor in science and the health care professions. Draaisma (2001, p. 153) wrote, “In both science and technology, metaphors direct the way we think, reason and hypothesize.” He discussed the way in which metaphors underlie the language of genetic research. Gentner and Gentner (1982) observed that there are two ways of metaphorically understanding electricity. One metaphor is of electricity as a cloud of individual electrons and the other is of electricity as a fluid. Some problems are best solved with one metaphor and some problems are best solved with the other. Students who tend to use the fluid metaphor struggle with problems best solved with the cloud metaphor, and vice versa. Both metaphors are needed. It can be argued that expertise, such as clinical reasoning, is in large part being familiar with all the relevant metaphors in a particular field, and having the judgment to know when to apply one or the other.

A major problem within the debate over the role of metaphor in language is the metaphors we use about language itself. Reddy (1993) discussed the LANGUAGE IS A CONDUIT metaphor. This is closely related to other metaphors we use, such as THE MIND IS A CONTAINER and COMMUNICATION IS SENDING. Our ways of talking about language encourage us to see it from a non-constructivist viewpoint. We speak of language as a carrier of ideas, a container for meaning, We unpack messages and take out what is in

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13 The view that language, and therefore all truth and error, is fundamentally metaphorical, goes at least as far back as Nietzsche (1873/1954).
them. Rorty (1979) criticised the image of the mind as a great mirror of the world around us, simply representing what is already “there”. This discourages us from seeing that the human beings who use language have to make the meaning, using the language as a tool. Adopting different metaphors, such as COMMUNICATION IS JOINT CONSTRUCTION, might allow us to adopt a more dialogical and constructivist view of what language is and does.

There is a growing body of literature relating to the role of metaphor in health care, which provides insights into the ways in which this aspect of our language influences the ways in which health care professionals conceptualise their practice and implement it. Edelson (1984) looked at the history of metaphors in medicine, going as far back as the work of William Harvey in the seventeenth century on the circulation. Harvey’s work is replete with what were then new metaphors for explaining his findings. The heart was described with a number of metaphors, such as THE HEART IS THE KING OF THE BODY, and another metaphor which is still in use today, THE HEART IS A PUMP. Edelson argued that metaphorical meanings can come to be regarded as literal meanings over the course of time. He referred to the work of the seventeenth century physician, Thomas Willis, who spoke of the internal processes of the body being like fermentation. For a modern biochemist that metaphor has effectively vanished, as the enzyme chemistry of fermentation and body function is regarded as one and the same. Edelson concluded that “metaphor creates perspective” (p. 21).

Burnside (1983) examined some of the metaphors used in modern medical practice, and discovered MEDICINE IS WAR. He pointed out some of the ways in which this particular metaphor can blind us to ethical issues, as much is excused when a state of war exists. Hodgkin (1985) took up this theme and advocated examining medical metaphors to clarify our assumptions about professional practice. He found the MEDICINE IS WAR metaphor insidious. It implies that patients are passive and doctors are warriors, and generally masculine. Technologies are seen as weapons, and therefore the more use made of them the better. In the acute situation, Hodgkin admitted that the metaphor can be useful. However, he pointed out that in chronic situations it can be counterproductive. Hodgkin discussed another pervasive medical metaphor, DISEASES ARE OBJECTS. This is seen in the way we speak of people having particular diseases such as mumps, influenza, etc. We say someone “has the mumps” but we do not say someone “is mumping”. This seems entirely natural to us and we tend to see diseases as objects with an independent
existence apart from the patients. We also tend to see patients as containers for disease. Hodgkin emphasised that although these metaphors can be useful they can also be very harmful. The doctor’s focus can be on the disease and not on patients and their concerns.

The metaphors in particular specialties of medical practice have been studied. Reisfield and Wilson (2004) gave a graphic example of the aggressive, warlike language used by one physician in talking to a patient with cancer. According to Reisfield and Wilson the martial metaphor is ubiquitous in cancer, as it is easy to see cancer as an enemy and health care professionals as combatants and allies with formidable weaponry. It can be an enabling metaphor. Reisfield and Wilson referred to examples in which patients found the metaphor gave them strength and resolve, even if it meant losing and dying with dignity after a battle well fought. However, they were at pains to point out that there can be serious limitations with any metaphor. The MEDICINE IS WAR metaphor can persuade people to think that the patient, rather than the treatment, has failed. The transition to palliative care can seem like capitulation and defeat, when it could be interpreted as a natural progression. Reisfield and Wilson proposed other metaphors which are sometimes used and might be of more benefit, such as LIFE IS A JOURNEY. Journeys have destinations, and the connotations of journeying can allow people to adjust to the reality of the cancer experience with a sense of purpose and dignity, without the martial overtones of the previous metaphor. Reisfield and Wilson concluded that no metaphor is inherently good or bad. They all have strengths and weaknesses and these depend on context. A powerful and enabling metaphor for one patient might be meaningless or even threatening to another. Health professionals need metaphorical skill and sensitivity when discussing diagnosis and management with patients.

There has been limited investigation of metaphor and other health care professions. Kangas et al. (1998) reviewed work in nursing, concluding that despite the popularity of discussing language there was little research into metaphor as a lens for discovering knowledge. Kangas et al. used a hermeneutic phenomenological approach to study the metaphors used by nursing researchers. They found that those who used more metaphors to describe their experience as researchers generally achieved more clarity. The metaphors used varied greatly, although certain ones tended to recur. Research was commonly described in terms of growing or building a research programme.
Van Manen (1990) pointed out that taking a metaphorical view of language and ideas has profound implications. With a metaphorical view it is much more difficult to claim absolutely true and certain knowledge, as “our most prized certainties, our best proven ideas, our most neglected commonplaces must admit to their metaphoric genealogy” (p. 49). The implication is that there is no final ground for justifying any idea. Wittgenstein discussed this issue in terms of the “bedrock” which gives us ultimate justification. Bedrock features of existence are shared by all humans, but to try and focus upon them directly violates their nature (Gill, 1996). The problem, according to Gill, is that whatever we can focus on and articulate is no longer bedrock, since we must be attending from something in order to attend to something else, and that which is attended from is bedrock. This is why we need metaphor to express these bedrock criteria. Gill argued that one of Wittgenstein’s great insights was that philosophy needs to be reconceptualised as a metaphoric enterprise. Metaphors permit us to make sense of the world without needing to adopt an extreme objectivist or relativist position, and metaphors allow us to find meaning in the dialogue of personal, cultural and physical voices that make up our lives.

It is my contention, following Gadamer (1989), that language speaks and defines our meanings. Therefore, to better understand clinical reasoning a focus on the language associated with it can reveal much of its meaning for health care professionals. Language can both disclose and obscure. Mintz (1992) discussed this issue and the ways in which our language can be used to describe an object or condition, and in the process instil a false sense that we have come to understand that object or condition. This echoes the work of Schön (1983, 1987) reviewed at the start of the chapter, in which he complained of the ways in which words can be used to close off inquiry just at the point when we should be opening up inquiry. Mintz (1992) also referred to Schopenhauer (1951), who wrote that there is a fatal tendency to be satisfied with words instead of trying to understand things. Nietzsche (1967) echoed this idea, explaining that we set up a word at the point where our ignorance begins. However, even with these caveats in mind, we must still use language as a fundamental part of clinical reasoning, and in order to understand what clinical reasoning is. Van Manen (1990, p. 50) pointed out that many of the phenomena we wish to study are not “a problem in need of a solution but a mystery in need of evocative comprehension”. It can be argued that clinical reasoning is such a mystery, and needs to be investigated in a way that permits this mystery to be articulated.
From the literature reviewed in this chapter we can regard clinical reasoning in the following terms. From the practitioner’s perspective, clinical reasoning is the process of constructing a story about a patient using the resources provided by a health care profession and the culture in which it is embedded. These resources include cognitive tools such as narrative forms, maxims, categories, words, utterances and metaphors that provide conceptual models for naming and framing problems and how they might be solved. These cognitive tools in turn change the individuals who regularly make use of them.

Much of the research reviewed in previous chapters centres round the research question, “What does someone need to know in order to do clinical reasoning?” This is essentially an epistemological question. Reviewing the literature in this chapter, we can suggest that a more appropriate question can involve a modification to make this more of an ontological question, “What does someone need to know, and how do they need to know it, in order to be a clinical reasoner?” We can indicate the form an answer might take, based upon the work of Wittgenstein, Bakhtin and Vygotsky. Individuals, participating in professional communities of health care practice, assimilate and embody the cognitive tools of their profession and the appropriate ways of using them. In the process these individuals are changed, and they experience and interpret the world in ways largely dictated by that profession.