THE INNER LIFE OF WORDS: AN INVESTIGATION INTO LANGUAGE IN TEACHING AND LEARNING

By Jane A.-M. Mathison
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Abstract

This is a qualitative inquiry into the possible relationships between language and thought for teachers and learners. This research has as its central focus some questions about the dynamic nature of language. These were ‘what is the role of language in the formation of conceptual structures’, ‘what light might an inquiry into this subject throw on the processes of teaching and learning’ and ‘what kind of method could best be used to illuminate such questions?’

The thesis uses Neuro-linguistic programming (NLP) as a method for inquiring into people’s deeply subjective experience, especially for modelling those experiences.

The methodology was both action research and phenomenology, inquiring into people’s subjective experiences. There were two phases to this project; the first consisted of my own interviews of six ex-patriates who had attended a course I had taught in a Middle Eastern country in 2000. Both phases paid attention to what in NLP terms, are called internal representations. I explored their responses to a number of language structures in interviews, which aimed to elicit some deep introspections from the learners. The second phase was the analysis of transcripts of six more interviews carried out by two collaborators, where I track changes in people’s constructs of learning, and themselves as learners.

The interview data is used to develop working hypotheses about the relationships between language and thought. These involve proposing that language transmits messages about how information is to be decoded, as well as content. A key finding appears to be a number of basic epistemological processes that are mediated through language, and which play a role in the construction of knowledge. The study offers models that describe the interactions of language and mental constructs, and lists some basic epistemological processes.

Practical implications of the study concern teachers’ awareness of the power of language, and the potential need for the training of teachers to address the interplay between language, thought and learning.
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The NLP class of 2000

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Chapter 1. Setting out on the Journey of Discovery.

Daughter. What are the really big differences between people and animals?
Father. Well- intellect, language, tools, things like that.
D. And it is easy for people to be intellectually objective in language and about tools?
F. That’s right.
D. But that must mean that in people there is a whole set of ideas or whatnot which are all tied together. A sort of second creature within the whole person, and that second creature must have a quite different way of thinking about everything. An objective way.
F. Yes, the royal road to consciousness and objectivity is through language and tools.
D. But what happens when this creature looks at all those parts of the person about which it is difficult for people to be objective? Does it just look? Or does it meddle?
F. It meddles.
D. And what happens?
F. That’s a very terrible question.

(Conversation between Gregory Bateson and his daughter Catherine-Mary Bateson, in Bateson 1972:48-49.¹)

1.1 Introduction.

The core intention of this research project is to explore the role of language in human information processing, mainly within the context of teaching and learning. This is a broad inquiry, with relevance to teaching and learning in both formal and informal settings. Although it concerns itself with some philosophical and especially epistemological aspects of learning and making sense, the aim is to contribute to educational thinking. The main participants that were used for the

gathering of information were adult learners, though there is also some use of observations made in a secondary school. It is thus rooted in an educational context.

There has long been a fascination about the internal dynamics of human information processing. These processes include such activities as thinking, learning, dreaming, remembering, reflecting, and not least, knowing. A central purpose here is to explore the approach of Neuro-linguistic programming (NLP) to understanding people's subjective processes.

The emergence of NLP was strongly influenced by Gregory Bateson's philosophical reflections (Bateson 1960, 1972, Bateson and Bateson 1988, Donaldson 1991). One of Bateson's main concerns was the exploration of the possibilities a cybernetic approach opened up for research into human behaviour and thought. This inquiry approaches the phenomena of teaching and learning from a cybernetic and systemic perspective, as well as using NLP. As Bateson's cybernetics included concerns and explorations of epistemology, this also forms a thread running through this work. Thus, whilst it has inter-disciplinary aspects, it is neither linguistics nor psychology, but seeks to delineate a different approach to what happens when people engage in learning. What I aim to explore specifically are the effects of language and communication on the inner world of the conceiver's constructs.

According to Mercer et al (1999) there has been little significant research into the relationship between language and thinking in the learning process. This thesis seeks to enhance understanding of the inter-relationships between language and thinking in the learning process, through the perspective of NLP, and Bateson's ideas. This inquiry could be said to follow in the tradition that holds communication to be central to the (sometimes inseparable) activities of teaching and learning. I approach the subject from a particular theoretical and epistemological standpoint.
The central questions that I address are:

- How does language influence the formation of people's conceptual structures?
- What perspective does NLP offer on inquiring into the processes of teaching and learning?

The thesis offers a model of the interactions between language and thought with special reference to learning processes. The model was derived from an empirical approach, within a phenomenological context, as part of an action research programme. Its status is that of a working hypothesis for the generation of future explorations.

1.2. An overview of forthcoming chapters

This first chapter gives a brief introduction to the theoretical background relevant to the whole work. Chapter 2 reviews some philosophical and methodological approaches that might serve as useful tools to further this inquiry, and describes the first phase of information gathering. The thesis explores in detail the approach of Neuro-linguistic Programming (Bandler and Grinder 1975, 1975A, 1979, 1982, Bandler 1985, Bandler and McDonald 1988, Grinder and Bandler 1976, Grinder Delozier and Sandler 1977) towards the main issues. I review this topic in relation to other approaches to language and cognition in Chapters 3, 4 and 5.

I was fortunate in having been invited to the capital of a Middle Eastern country in 2000 to give a course in NLP to ten people working in one of its large military hospitals. Most of my data comes from this period.

Two distinct data gathering phases emerged from this time. The first one happened during my two months' stay, where I carried out a series of preliminary interviews of people who had participated in an NLP course I had given. I believed these interviews to be a pilot study
at the time. However, these yielded such a wealth of information when transcribed, that they became one of the two major sources for my analysis and subsequent theory generation of this inquiry. The analyses of these, and my reflections on them, form the main part of chapters 6, 7, 8 and 9.

The second phase was the result of the activities of two collaborators, who carried out some post-course, retrospective interviews of some students on the course, whose tape recordings I transcribed after my return to the UK; I used the information from these to explore new ways of understanding what may be happening when people learn. I describe and explain these in Chapter 10.

In Chapter 11, I draw on information gathered from both these phases, as well as a transcript of a previous observation of a mathematics class\(^2\) to propose a new model of learning in which language structures may have distinctive epistemological functions. I propose that these may catalyse various processes leading to the construction of learners’ models.

In Chapter 12, I review some current approaches to the training of teachers in communication skills. I put forward some brief suggestions for the inclusion of a new approach to the training of teachers in communication so as to enhance their teaching. Chapter 13 is a review of the work as a whole, and takes a backward glance over what this inquiry may or may not have achieved.

1.3. Serendipity, and the personal emergence of the question for the researcher.

*Heuristic inquiry is a process that begins with a question of a problem which the researcher seeks to illuminate or answer. The question is one that has been a personal challenge and puzzlement in the search to*

\(^2\) This was a part of the coursework (Assignment 2) for the MPhil/PhD/EdD Research Methods Programme at the University of Surrey, 1999.
understand one’s self and the world in which one lives. The heuristic process is autobiographical, yet with virtually every question that matters there is also a social – and perhaps universal – significance. (Moustakas 1994:11)

Reason and Marshall (1987) urged that research be perceived as necessarily including a personal process. James (1999) has explored the influence of researchers’ autobiographies on the process and outcomes of their research. Here I recount some of the professional and personal events that led to my own involvement in this inquiry. It initially arose as the result of my own reflections (and puzzlement) about many challenging experiences I have had in nearly forty years of teaching and learning. I first began by teaching Botany in the early 1960s, at what was then Chelsea College of Technology, (University of London). Then the approach to teaching was didactic, and effectiveness was judged on the amount of ‘useful’ information that a lecturer transmitted to students. ‘Useful’ in this context meant ‘necessary to regurgitate to pass unseen exams’. Then, in the seventies I lectured in Zoology at a College of Technology, which was in the throes of becoming a Polytechnic. Originally, here too, the teaching was essentially the transmission of information, made all the more challenging by the fact that the examination questions were set ‘Internally’ by the University of London, and completely unknown to us teachers on the ‘External London’. The only way to teach, at the time, seemed to be to cram as much information into the poor students just in case a question came up on some abstruse topic that might only be hinted at in the University’s published syllabuses. Often it seemed like a game of chance.4

It was fortunate that this particular college was designated a Polytechnic in 1972, and began, (not without a struggle) the transition to the development of designing, teaching and awarding its own degrees under the aegis of the CNAA (Council for National Academic

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3 The degree was the now long defunct BSc (External London).
4 If the lecturer was ill, and missed a topic, which then came up on the exam paper, this was merely considered to be bad luck.
Awards). The CNAA insisted (In Clause 5 of their Educational Principles) that scientific subjects should be taught in the context of their social, political and economic backgrounds, which presented many challenges to us teachers who were not even aware of the limitations of logical positivism, let alone the necessity of persuading science undergraduates of this. I was one of a team chosen to design a completely new approach to the teaching of scientific subjects. It became obvious however, that this section of the syllabus needed a different approach from that of classical science teaching, and I found myself becoming fascinated by the History and Philosophy of Science, and how to teach it.

We were forced to become innovators, and present, for validation, a course that was to be taken by all the science undergraduates. This included the History and Philosophy of Science in the first year, Science in the Present Social Context in the second year, and a third year group project, where students worked as a team on a jointly designed project about a scientific issue of current relevance.\(^5\)

At about the same time, the Polytechnic encouraged our (not always willingly given) participation in its newly formed and innovative School for Independent Study, (SIS) where students without the ‘usual’ qualifications could sign up to do a degree in a subject of their choice, however outlandish, provided they could persuade the Board of Studies to accept their Study Plan and Learning Contract, and find a member of the teaching staff to supervise them,\(^6\) (O’Reilly 1989, 1991, Stephenson 1988, Stephenson and Laycock 1993). This resulted in the somewhat strange situation where a Biologist such as myself was suddenly asked to supervise the studies of students whose interests were not always covered by my formal academic

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\(^5\) Some examples of these were; the ecology of motorway verges (with the advent of the neighbouring M11), the misuse of antibiotics, the ramifications of Darwin’s theory, the development of nuclear weapons, the ethics of the pharmaceutical industry, the use and mid-use of antibiotics, and many others.

\(^6\) Many colleagues refused to have anything to do with such an unorthodox approach.
qualifications. They were often also difficult to place within accepted academic disciplines. The existence and success of the School for Independent Study (SIS) certainly exposed the tensions between academic orthodoxy and a more post-modernist, heterogeneous and liberating approach to learning. It was closed in the early 1990s as the result of changes in educational policy.

The most critical difference that I, as a tutor working with students from SIS, experienced, was that teaching people whose field of interests were somewhat outside my own immediate areas of expertise demanded that I pay more attention to the processes they used to learn and investigate their field, rather than its academic content. I had to develop a very different approach to tutoring. Many of my students got First Class Honours, fully validated by the CNAA's various External Examiners. What struck me as curious was that there seemed to be little interest in the educational literature in the idea that teaching involved attention to both process and content. Recognising this distinction was a fundamental part of training in Neuro-linguistic Programming. Traditionally, NLP is taught through a kind of apprenticeship, learning and finding out through experience and assisting other trainers. This gave me many opportunities to observe very 'good' communicators at work. I became intrigued by the distinctions between process and content, and by the ways in which learning processes could be activated by what, and how discussions were 'language'd'.

At this point, in the late eighties, serendipity played a vital role in my own personal and professional development. A friend of mine, a Swiss psychiatrist who works for the International Committee for the Red Cross, was engaged in visiting prisoners in countries where torture was an acceptable part of the judicial process. This faced her with the task of understanding the suffering of political prisoners who had been tortured and were consequently suffering from the effects of their Incarceration and PTSD (Post Traumatic Stress Disorder). She told me that she found NLP to be very useful for 'modelling out' PTSD.
claimed that thus she gained a different understanding of the inner
dynamics of the victim’s thought processes. This, she believed, gave
her new understandings of the inner aspects of this distressing
condition. She claimed she was able to plan rapid and effective
interventions in the short time the ICRC is allowed for visiting
individual prisoners. She also asked me to translate some of her
writings from German into English, (whilst on a summer holiday in the
mountains of Switzerland!) and at that point I became curious to
know more. It was my first introduction to the idea that we use our
senses internally to recreate events in our lives. She has continued to
work in this field, and has trained other medical staff, and published

I did my first ‘Practitioner’ course in NLP in 1988, and was
unimpressed by its claims, its culture, and apparent lack of rigour.
However, serendipity was not going to leave me alone, and on my
return to the Polytechnic at the start of the 1988 Academic Year, the
School for Independent Studies circulated all the staff, asking whether
any of us knew anything about NLP, as they thought it might be a
subject that might recruit more students to SIS. I responded, and to
my horror found myself a named supervisor to students wanting to
work on NLP. It became necessary for me to acquire many more skills
and qualifications in it, which I did. Then, in the late eighties I took
voluntary redundancy\(^7\) from full time teaching, and started a new
career as a trainer in Neuro-Linguistic Programming, whilst teaching
part time in two separate departments at what had now become one
of the ‘new’ universities. These were the Departments of Health
Studies, and Educational Studies. I have written about some of my
experiences of applying NLP to teaching and learning elsewhere,
(Mathison 1994, 1999).

So the early nineties saw me as Course Tutor to a part time degree
called the BA in Nurse Education. The NLP training had introduced me

\(^7\) This was in response to a ‘trawl’ of staff aged over 50 years.
to the emergent paradigm of Cybernetics, the epistemology of Gregory Bateson and the philosophy of Bertrand Russell and Alfred Korzybsky, as well as a wealth of information about the influence of language, much of it based on the work of the psychiatrist Milton Erickson, as well as Richard Bandler and John Grinder’s approach to language and communication. (I review these, and other approaches to language in Chapters 4 and 5).

My then Head of Department asked me to ‘do the Education bit for the nurses’ so I took the opportunity of making two questions the central themes of my teaching. These were ‘what are the processes that are involved in learning?’ and ‘how do we elicit these by how we behave and communicate with our students?’ At the same time I examined my own processes, both conscious and unconscious, to learning new things. My teaching by this time was greatly influenced by NLP, as well as the ideas of Gregory Bateson. The success of this course led to me being invited to a capital of a country in the Middle East, initially to teach the distance learning students working at an Armed Forces Hospital, and studying for the BA (Nurse Education). I was then invited to make several trips as a visiting lecturer to teach NLP Practitioner Courses. One of these yielded the data on which this inquiry is based.

The BA (Nurse Education) recruited few students. By chance, they were an extraordinary group of people prepared to explore and push at the boundaries of their perceptions about the teaching and learning processes, and the crucial role played by communication in their own teaching. Two of them went on to register to do PhDs in this area. So I asked myself the question, ‘why not me too?’ thinking that I would be gently turned away by any Department of Education that I approached, either because the topic I was interested in was too eccentric, or because people in their seventh decade may be thought of as too old to do PhDs. These fears, however, were unfounded. If I have stretched the envelope of possible hypothetical explanations of
learning too far, the responsibility is nevertheless mine. I offer the results of this research purely in the spirit of inquiry.

Thus, serendipitously, did this inquiry come about.

1.4. Language in teaching and learning: some introductory reflections on theory.

Nothing is more practical in teaching than knowing how people learn. Learning is not a theoretical issue. We need to understand the learning process not only because, as teachers all, we need to know ourselves, but also because we need to express our curiosity in how other people learn. (Cullingford 1990:231).

This section is an introduction to some of the literature on the central topic, serving to set the scene for the rest of the work. It is not the definitive literature review, but rather an introduction to my own theoretical approach.

The nature of learning is one of the main foci for this inquiry. MacBeath (2002) claims that about 85 percent of what we know about learning has been discovered in the last 10–15 years. Rojas-Drummond and Mercer (2003) have pointed out that there are a variety of different approaches to inquiring into language and education, largely inspired by the work of Vygotsky, (1978). Vygotsky's approach, which recognises the critical significance of language in the processes of learning and development, is summed up in his statement that "learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers, (Vygotsky 1978, cited in Pollard 2002:14).

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8 To be published in a forthcoming issue of The International Journal of Educational Research
There has, however, been little systematic exploration of the effects of language on the subjectively experienced processes involved in learning. This inquiry seeks to complement existing understandings of the role of learning by exploring the relationship between specific language structures on a learner's construction of knowledge, drawing on Neuro-linguistic Programming.

The literature on the role of language in learning comes from a variety of different backgrounds. Vygotsky's idea (1939) that it was important to study how the language of teachers influenced the learning process was being explored by some, including Barnes in the 1970s. Over thirty years ago Barnes (1972), stressed that it was important to generate useful discussions between learners as a part of their teaching and learning process. He suggested that "language is a major means of learning, and (...) pupils' uses of language for learning are strongly influenced by the teacher's language," (Barnes, D. 1972, cited in Open University 1972). He suggested that one fruitful line of inquiry could be the study of teachers' linguistic styles, and use of linguistic forms to influence the ways in which people learn. One of the main differences that they identify is whether teachers create a passive receiving of knowledge by learners, or its active exploration.

Cazden (1988) has used an approach based on Discourse Analysis to describe the language patterns that are typical of classroom interactions, and of which teachers and learners may not immediately be aware. She urges the introduction of a more catalytic learning environment, where learning is not simply dependent on producing the right answers, and being corrected for wrong ones. She also cites research that implies that the immediate correction of children's answers by teachers depressed both their abilities to self-correct, and to score highly on accuracy tests. One of her main interests was the

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9 Cazden reviews some of the most common patterns of discourse in the classroom as teacher 'inquiring', learner 'responding', teacher 'evaluating' and feeding back whether the response is acceptable or not. This pattern of classroom discourse is shortened to the acronym IRE (Initiate, respond, evaluate).
possible role of exploratory talk among children as a way of learning. Influenced by Barnes (1976), she describes exploratory talk as "the process of learning without the answers fully intact," (Cazden 1988).

There has been increasing interest in the effects of teaching children 'exploratory talk'. Mercer, Wegerich and Dawes (1999) for instance, found that encouraging learners to use exploratory talk about specific topics significantly increased their understanding. Mercer (1995) suggests that sharing, and co-operatively guiding the shared development of knowledge should be at the heart of the learning process. He is critical of the approach to teaching that discourages children from seeking information for themselves, and sharing their reflective observations. He believes that there are some essential requirements for what he calls 'the guided construction of knowledge', the most important of which is that the 'essence of human knowledge and understanding is that it is shared,' (Mercer 1995:66). He conceives of language as a purposeful persuasive process, proposing that Vygotsky "draws our attention to the construction of knowledge as a joint achievement," (Mercer 1995:73). In Mercer's view, the teacher's role is that of a 'discourse guide'. Such collaborative learning involving guided discussions among learners is fast becoming an accepted and recommended classroom activity. Tao (2003), for instance, reports that using stories and peer collaboration were effective means of generating learning on the nature of science for many of the students involved in his study.

Mercer's views imply that a closer study of the influence of language on thought becomes critical to the development of our understanding of teaching and learning. Mercer also states his belief that the process of communication with language contributes to children's thinking, (Mercer 2000). He observes that few in his field share his interest in exploring the nature of talk. This, he believes, is not confined to educationalists, but also that "people with a practical interest in the effectiveness of communication in business, counselling, law, and
other important areas of every day activity have shown surprisingly little interest in the careful analysis of talk" (Mercer 2000:175).

The present study takes the line that we need to know more about the influence of language, which is a complex task. Anderberg (2002) suggests that "little is known about the character of the relationship between word meaning and understanding, how it develops or what role it plays." (Anderberg 2000:89). However, here he is addressing the topic of students' language, rather than that of teachers.

Despite the relative paucity of research into the role of language in learning, there are further publications of interest. Crespo (2002) for instance, has found from her classroom observations that traditional modes of discourse between teacher and pupils are very persistent, and likely to remain unchanged unless examined more purposefully. She suggests that praising tends to cut off discussion, and explored alternative strategies for teachers, such as probing students' thinking, rather than automatically correcting it. She raises an important question: what sort of course experiences for those training in teaching could better support, extend and balance teachers understanding of teachers' talk? More recently, Harrop and Swinsch (2003) have analysed teachers' uses of different types of questions, claiming that there has been no essential change in their format in half a century, and that approval and disapproval are still very much a part of teachers' feedback strategies.

Entwistle and Smith (2002), taking a constructivist view, have proposed a model to describe classroom learning, observing that constructivist theories present learning in terms of the development of individual understanding, but that this is "too diffuse a set of ideas to provide an integrative framework" (Entwistle and Smith 2002:324). They found that explanation, enthusiasm and empathy were the qualities of communication which are most likely to evoke what they term a 'deep' approach to learning in pupils. Corden (2001) has investigated the effects of introducing group discussion into a learning
situation. He found that many students were inhibited from using exploratory talk, as this was not what they were used to. He also observed that teachers needed certain skills if small group work in their classrooms was to operate successfully.

Corden's (2001, 2001A) approach typifies much of the research into the area of teacher-learner interactions. For instance, he presents a classification of the different types of utterances heard in classrooms, drawn from forty videotaped discussions. He then analysed how often these occurred under different teacher led contexts, such as the differences between when students perceived teachers to be in a non-examiner role, or when teachers were seen as expert examiner. He also identifies certain Introductory phrases (such as *I was wondering*, and *what if?*) as linguistic markers that he claims encourage collaborative learning.

Many of these works focus mainly on the language of learners, and on how to facilitate the development of pedagogically useful talk among them. Phillips (1985) makes the point that, with the realisation of the importance of classroom discussions, which has its historical roots in the 1970s, teachers need to understand more about how to generate such activities.

None of this research, however, attempts to address how the learning is subjectively experienced. The works that I have cited have not attempted to answer questions such as *'how specifically does language influence the construction of knowledge?'*, and *'what are the subjectively experienced effects of communication?'*. So, the gap this thesis attempts to address is the need for a more precise inquiry into the actual, subjectively experienced, effects of language on cognition, and thus on learning. We can describe and classify communication patterns to our hearts' content, but without an understanding of what language actually does to the construction of knowledge of an individual person, we fail to address what may turn out to be one of the most vital dimensions of teaching and learning.
To approach such a problem, I have drawn on a number of sources. This includes many of the models used in linguistics, cognitive psychology, systems' and cybernetic theory,\(^\text{10}\) and other areas where understanding human interaction is paramount.

1.5. Introducing Neuro-linguistic Programming, (NLP).

NLP offers a model of the relationships between language and thought, and was one of my starting points. Although I cover many of the origins and ideas of NLP in more detail in Chapters 3, 4 and 5, a brief historical introduction may be appropriate to set the scene. Neuro-linguistic Programming (NLP), was developed in the USA in the 1970's and has achieved widespread popularity as a method for communication and personal development, and is a recognised mode of psychotherapy in the UK. To date, however, the academic community has shown little interest in it. The exceptions are Craft (2001) who is critical of some aspects, and Tosey and Mathison (forthcoming publication) who respond to Craft, and suggest that when understood more fully, it could be a useful approach to qualitative inquiry into learning.

NLP is claimed to be an innovative form of modelling (Dilts 1994, 1998) that alleges it offers a potential for systematic and detailed inquiry into people's subjective experience. NLP may turn out to be complementary to other approaches such as phenomenology and cognitive and conceptual mapping, because it seems that it enables the researcher to seek more precise information about people's subjective experiences. This inquiry is as much about using NLP as it is about evaluating its potential as a more refined research tool for such an inquiry.

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\(^{10}\) I explore these further in Chapters 3, 4 and 5.
NLP was developed at the University of California at Santa Cruz\textsuperscript{11} in the 1970's (Jacobson 1994; McLendon 1989). Its founders and principal authors were Richard Bandler, a mathematician and information scientist, and John Grinder, a linguist. Their partners, Leslie Cameron-Bandler and Judith DeLozier, also contributed significantly, as did other early developers such as Robert Dilts and David Gordon (McLendon 1989).

The title, "Neuro-linguistic Programming" was coined by Bandler and Grinder (McLendon 1989), who were partly inspired by Korzybski's (1958) extensive theoretical explorations of the relationships between language and ways in which he believed that the nervous system patterned information. This he referred to as Neuro-linguistics. Bandler and Grinder added *programming* so that their model refers to a purported systematic link between a person's internal experience (neuro), their language (linguistic) and their patterns of behaviour (programming). It is difficult to place it within any one academic discipline: it straddles linguistics, transformational grammar, psychotherapy, cybernetics and cognitive psychology, and its epistemological approach is inspired by the ideas of the polymath Gregory Bateson and the logic of the mathematician and philosopher Bertrand Russell. Despite the name NLP, and its connotations, it has no direct connection to neuro-science, or to computer programming (though these were fields of interest to its developers)\textsuperscript{12}.

The first NLP publication was Bandler and Grinder's (1975) *Structure of Magic: a Book about Language and Therapy*, which was an attempt to identify patterns of communication that distinguished what they identified as extremely effective communicators. These patterns are explained in some detail in Chapters 4 and 5. They were also interested in how they differed from the strategies of some less successful

\textsuperscript{11} \url{http://sidjacobson.com/institute/history.html} accessed 29.11.2002
\textsuperscript{12} It is entirely separate from Natural Language Processing (for example, \url{http://www.cs.bham.ac.uk/~pjh/sem1a5/pt1/pt1_history.html}), which also uses the acronym NLP.
communicators. They based their studies, among others, on Virginia Satir, a leading family therapist, Fritz Perls, the founder of Gestalt therapy, and Milton Erickson, a hypnotherapist. Each of these had skills which Bandler and Grinder were able to identify, and model.

Central to the NLP approach is that it proposes a typology of language patterns which are believed to reflect basic cognitive processes. To put it differently, *it proposes a model of language in which certain linguistic structures activate and reflect some fundamental epistemological processes essential to the construction of meaning*. I describe these aspects in more detail in chapters 4 and 5.

The research project used this NLP model as a tool for data gathering. NLP refers to this type of approach as *modelling*, which is, eliciting the subjective processes that people use when approaching and carrying out specific tasks. There is a sense in which I am using modelling to understand some of the processes specific to learning, which are mediated through language.

NLP remains controversial in academic circles. One of the greatest obstacles to introducing NLP into an academic context appears to result from the culture and ethos of NLP, which has resulted in its own particular, somewhat anarchic genre. Most of the books written by the originators come with gaudy, psychedelically illustrated covers, and have curious titles, such as *The Structure of Magic* (1975), *Frogs into Princes* (Bandler and Grinder 1979), and *Using your Brain for a Change* (Bandler 1985). These are hardly likely to attract the attention of mainstream cognitive psychologists or cognitive linguists.

The almost total ignoral of NLP by the academic community may be an example of how particular genres of discourse act both for the maintenance of cohesion in a group or culture, and at the same time exclude others. As Mercer (2000) points out, “Different groups of
researchers have their own discourses and research agendas, with not much dialogue taking place between them.” (Mercer 2000:167).  

One of the aims of this inquiry is to attempt to bring together information from some of these disparate disciplines, using NLP as a central thread. Mercer suggests that “we need a fresh perspective on language and thought, one that is not commonly employed in psychology, linguistics or other apparently relevant field of research.” (Mercer 2000:167). He urges that we need what he calls an ‘intermental’ (my italics) perspective, which perceives language and communication as an activity for the development of knowledge as a shared process. Most NLP practitioners would recognise this view. What this inquiry aims to contribute is an unravelling of the complex interactions between language and thinking at a more precise level. This will itself also need evaluation for both its usefulness and its limitations.

When using any model, it is important to be aware that a model is only a conceptual framework, which may bring some aspects of a phenomenon to the attention of the observer, whilst hiding others. My approach to NLP is purely Instrumentalist; its usefulness can only be gauged by the amount of information its use yields. All models have their limitations, and I review some of the limitations of NLP in Chapter 13.

There remains a fundamental difficulty for a researcher using such an approach; much of NLP is not learned from published work, but by what can only be called a system of apprenticeship, which includes not only attending courses, but also ‘doing time’ as an assistant to more experienced trainers, as well as running one’s own courses. On the face of it, this makes NLP a different genre to most academic activities, and

13 Time and again, in my reading for this venture, I have been struck at how many different groups there appear to be studying the powers of language to influence and shape the thought of others, yet who do not appear to know of each other, if their bibliographies is any indication of this.
adds a further challenge to the putative researcher in this field. It includes the challenge of translating between one *genre* and another, so as to create bridges between different outlooks.

1.6. Conclusion.

This chapter has introduced this inquiry from the personal history of the researcher. It has stated the main research question illuminating the inquiry. It has also introduced the reader to Neuro-linguistic Programming as a novel approach that has yet to find its place in mainstream academic research. This was to set the scene for the ways in which the data gathering phases of this inquiry developed, and how the resulting information was then analysed.

In the next chapter I describe some of the methodological issues that arose from starting and following through such an inquiry, and describe the emergence of the two data gathering phases. The central role that NLP played is explained in greater detail.
Chapter 2. The Nature of this Inquiry: some methodological issues addressed.

The closing years of the 20th Century could find us on the threshold of important new understandings, but whether to cross it will depend on our success in integrating the literary scholar's appreciation of what language does, the ethnologist's respect for what actually happens, the philosopher's perspective on the larger picture, the psychologist's concern for experimental manipulations, the computer scientist and neuroscientist's fascination with how things work, and the artist's capacity to produce dreams. (Chafe 1994:302 – 303.)

To most scientists, subjectivity is the Great Satan. It is the mind-virus which has turned the humanities into an intellectual free for all, where the idea of "progress is dismissed as "bourgeois", and belief in "facts" naïve. (Matthews 1998:17).

2.1 Reflections on research methods.

Although the main framework for this inquiry was action research, (which I consider later in this chapter) when I reflected on the ways in which the questions could be approached, phenomenology seemed to offer the most appropriate approach for such an inquiry. Thinking, learning and responding to communication are phenomena, which belong to the realm of people's subjective experiences. The data for this research came from interviews and questionnaires designed to elicit information about respondents' intensively experienced conceptualising and what they reported. This required both delicacy and precision from the inquirer. It meant using language and thought to investigate the language and thought of the other, through what can only be described as a kind of focused introspection. A question that then arises is: what existing approaches have been used to
inquire into such phenomena? What kind of theory window\(^1\) would enable the inquirer to see a more detailed picture? Creswell (1998) sums up the phenomenological approach as one that “serves as the rationale behind efforts to understand individuals by entering into their field of perception (authors’ emphasis) in order to see life as these individuals see it”. Stanage (1987) claims that “phenomenology is the clearest, most foundational and fullest form of investigation”, (Stanage 1987:281). However, there remains the question of how to investigate such a complex phenomenon. Lincoln and Guba (1985) propose that an important but frequently overlooked aspect of design is to select the theory (and the methodology it generates) that provides the most power in relation to the problem. I interpret what they mean by power as the amount of useful information that is generated through such an inquiry.

The choice of an appropriate methodology is also one of the most critical factors influencing how the research questions are to be addressed. Silverman, taking a somewhat instrumentalist approach, warns that, like theories, “methodologies cannot be true or false, only more or less useful”, (Silverman 1993:2). A quantitative approach is precluded because it is not possible to apply measurement to a phenomenon that has yet to be described. In this case the topic under the metaphorical research lens is the relationship between language and people’s subjective internal thought processes. Therefore this is also an inquiry into some of the dynamic aspects of consciousness. Essentially, one is seeking to discover, describe and define a new phenomenon, or aspect of one, however transient, through an intense collaboration with others. This indicates that phenomenology may be a useful approach. My own approach is based on this, but I used my own practice as a source of information, and action research also played a critical role.

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\(^1\) I use this term in the sense that Denzin and Lincoln (1998) use it: “not only are facts determined by the theory window through which one looks for them, but different theory windows might be equally well supported by the same set of facts...” (Denzin and Lincoln 1998:199)
Stevens (2000) proposed that phenomenology should be a central discipline in the field of consciousness studies. When consciousness is the focus of investigation, then the traditional separation between the observer and the observed is difficult to maintain. Phenomenology itself is not a unified approach, but is split into different approaches, (Stevens 2000). Stevens regrets the failure to develop an effective phenomenological methodology. Approaching the study of conscious experiences is fraught with epistemological traps; not least is the question of the status of the information obtained through asking people to be deeply introspective, and then transforming such data into language, in order that it can be communicated. This was one of the main ways in which I gathered information for this inquiry. “For we are creating our consciousness in the very act of creating it”, (Stevens 2000:113).

Phenomenologists are thus dependent on verbal accounts of phenomena which are not themselves necessarily verbal. Words themselves may also have different meanings for different people. This is a fundamental difficulty in using information acquired through other people’s introspections. Stevens points out, “such accounts can only be reconstructions, subject to the interpretative style of the subject and/or researcher and always open to change and negotiation,” (Stevens 2000:115). Stanage (1987), making a case for a phenomenological approach to language, describes linguistic phenomenology as a “way of articulating, as precisely as possible, the distinctions between what adults say in direct investigation, and description of phenomena which we feel, experience and conscious (know with),” [sic]. (Stanage 1987:53). However, there is no escaping the deeply subjective nature of the information so gleaned, which raises the issue of the status of subjectivity itself, let alone the question of the doubtful conceptual distinctions between the subjective and objective.

It has become widely acceptable to believe that knowledge is never ‘neutral’ but always emerges from the matrix of a pre-existing
conceptual framework or set of beliefs. (Chalmers 1978). The postmodernist approach to research stresses that the distinctions between objectivity and subjectivity are false ones. Thomas Kuhn, has described how the paradigm that was operative at a particular historical period influenced not only what was selected to be observed, but also the interpretations and explanations that were then generated, (Kuhn 1970). The notion of objective knowledge belongs within the logical positivist tradition. Mangan (1993) accuses the psychologists, whose main conceptual operational framework is logical positivism, of squeamishness. He suggests that it is time that the rejection of the ‘subjective’ is seen for what it is: an unscientific prejudice [...] which diminishes the scope of research” (Mangan 1993:93). Lincoln and Denzin (1998) resolve the divide between the Scylla of objectivism and the Charybdis of subjectivism by suggesting that the qualitative researcher’s commitment should be to “study the world always from the perspective of the interacting individual” (Lincoln and Denzin 1998:407).

This has become one of the main philosophical assumptions which guides the qualitative research carried out within a post modernist framework, (Creswell 1998). Reason and Marshall (1987) describe the post positive approach as one in which the researcher is living in a participatory universe where truth can be practical, intuitive, experiential and presentational. Moustakas (1994) also proposes that such approaches generate information which incorporate creative self-processes and self-discoveries. As in quantum physics, the observer brings the universe of her observations into being, (Nagel and Newman 1956). Participation means more than naively wondering how the apple fell. In my view, it also means actively participating in the dialectic between theory and observation, hunches and data, paradigms and practice, self and others.

Moustakas (1994) defends the phenomenological approach, because, he claims, it should lay stress on open (my italics) processes in conducting research, rather than on fixed methods and procedures.
He also points out that the phenomenological approach is an inductive process, where, contrary to the nomothetic approach, the pre-existing conceptual frameworks of the researcher should be put aside, and the researcher be open to the possibility of fresh discoveries. Giorgi has summed up this position: "The return to beginnings makes the phenomenologist a perpetual beginner" (Giorgi 1985:86). Moustakas (1994) proposes that the task of the phenomenological and hermeneutic approach is to explore the direct conscious description of experience, and the underlying dynamics of structures that account for the experience. He, like Stevens (2000) recognises the somewhat paradoxical nature of language in the inquiry into consciously experienced phenomena. "Our possession by language is the ontological condition for our understanding of the texts that address us", (Moustakas 1994:10). Paradoxically, I am forced to use language to investigate the effects of language on consciousness!

The phenomenological approach also seemed to be appropriate for working with people's subjective experience, because its aim is to uncover and describe new phenomena; (Moustakas 1994). As such it seems suitable as an approach for inquiring into the relationships between consciousness and communication. Maykut and Morehouse (1994) have suggested that "the discovery of propositions by observation and the careful inspection of the patterns which emerge from the data are the hallmark of the phenomenological approach." (Maykut and Morehouse 1994:13). Such an approach could be criticised for being too deeply subjective, however it is the very nature of subjective experience that is under the microscope. Moran (2000) wrote that "phenomenology attempts to recognise and describe the role of consciousness in the achievement of knowledge, and is not wallowing in the subjective domain purely for its own sake." (Moran 2000:15).

One important aspect of this inquiry was to examine how useful the NLP approach to language and precision questioning were as effective tools for a phenomenological inquiry. My own personal view, which
developed from my analyses of the transcripts, is that this approach has uncovered aspects of conscious and unconscious thinking that are new to the educational literature. In fact, it yielded a veritable *embarras de richesses* of insights into language and learning through the use of introspection guided by my use of NLP approaches. This placed me in a conflict; should I weed out what might not be so interesting, and risk being accused of too much bias? Or should I be as transparent as possible, and write about as many of my findings to do justice to the approach, and risk overloading the reader? My sense throughout this inquiry was that of a biologist having been given a new kind of high-powered microscope, which uncovered many novel and sometimes elusive creatures moving through the depths of people's consciousness. I therefore opted for the latter choice, to give as complete an account as possible of some teasingly curious, evanescent, and sometimes paradoxical effects of language and teaching on people's thinking. The risk in this was the danger of overloading the reader with detail.

2.2. The case for introspection

Most of the data for this inquiry was obtained through interviews which asked participants to describe the responses which they experienced through the guided introspection that I used when interviewing. Thus the inquiry relies heavily for both the information, and the models derived from the information, on data obtained from people's shared descriptions of their inner worlds. Lincoln and Denzin (1998) suggest that qualitative research might move away from "grand narratives and single, overarching ontological, epistemological and methodological paradigms" (Lincoln and Denzin 1998:407) to a position where inquiry is committed to focusing on personal interactions.

This raises the question of the status of such information, which has been obtained through introspection. Moustakas describes the heuristic approach as one which involves a process of internal
searching, which enables the discovery of both the nature and meaning of experience. This implies that introspection has some recognition as an information gathering technique. My own approach to this inquiry was to investigate people’s subjective experiences of language structures and learning. I wanted to know how people experienced learning itself, as well as how they responded to particular types of language structures. In the first data gathering phase, very careful and precise questions were used in order to elicit people’s subjective experiences, which could only be accessed by them through the act of introspection. Thus most of my data was obtained as the results of engaging in guided introspection with my collaborators. This was done partly through careful questions in my interviews, and the analysis of transcribed interviews carried out by two collaborators.

The phenomenological approach proposes that people’s inner worlds of subjective experience, however complex and difficult to pin down, are nevertheless a valid area of inquiry. Stanage (1987) has put forward the bold claim that phenomenology is “founding, foundational and a foundation for all philosophies and for all science”, (Stanage 1987:45). This raises the issue of the management of both the complexity of the processes of introspection, and the reliability of the information so gained. Mangan, (1993) citing William James, reminds us that the introspection of a transitive act of consciousness is difficult. “The attempt at introspective analysis [...] is in fact like seizing a spinning top to catch its motion, or trying to turn up the gas to see how the darkness looks,” (William James, cited in Mangan 1993:95). Chafe 1994) points out that “private, introspective data provide a more direct access to the mind, but suffer from the absence of public verifiability” (Chafe 1994:25), yet urges its use in the exploration of consciousness, because, “though difficult, [it] is an absolutely essential part of this picture”, (Chafe 1994:15). He proposed that it was important to immerse oneself in “linguistic and introspective observations, combined with the cultivation of a creative imagination adequate to understanding these observations in
maximally insightful ways”, (Chafe 1994:25). Carruthers (1996) proposed that although there was scope for error in introspection, it was nevertheless a useful vehicle for inquiring into people’s thought processes.

Stevens (2000) states that since the early introspectionists, there have been few attempts at accessing and representing people’s immediate subjective phenomenological experience. Henry (2000) adds that the majority of orthodox approaches to transforming consciousness in the clinical area are heavily dependent on introspection. Harre (2000) defends the use of introspectively obtained data: “the legitimacy of trying to convey to another person the nature of one’s own private experience by describing it needs to be defended,” (Harre 2000). Giorgi (1985) offers the critique that “psychology has consistently failed to explicate the phenomenon of thinking” (Giorgi 1985:86). It is difficult to see any way of inquiring into this field (other than by neurological means), which does not make use of information harvested from introspection. Johnson Laird, whose main interest was the exploration of people’s mental models, wrote in defence of introspection: “why can’t we be aware of the rules of language and thought by introspection?” (Johnson-Laird 1983:ix). Patton (1990), writing about approaches to research methods, wrote that: “The inner perspective assumes that understanding can only be achieved by actively participating in the life of the observed and gaining insight by means of introspection”, (Patton 1990:47).

I am nevertheless aware of Miller’s warning, that “introspection is a fickle mistress”, (Miller 1960:71), so offer my findings in the knowledge that my field of inquiry is, by its nature, complex and difficult to clarify. Croft (1998) asked “What can introspective linguistic evidence, taken alone, tell us about mental representation of forms and meaning?” (Croft 1998:151) He urged that it could only lead to possibilities, which would then need hard ‘neurological’ data to validate it. Sandra, (1988) in his response to Croft, suggests that although the study of how the mind represents linguistic facts to itself
is a valid one. He proposes that "as far as language processing is concerned, linguists have nothing to say, and I know no linguist who has tried to do so". (Sandra 1998:364). He concludes that "it is highly advisable to systematically avoid any reference to mental representation in linguistic discussion." (Sandra 1998:376).

My approach is the exact opposite; this inquiry is based on the idea that it is possible to explore the subjective responses of other people exposed to certain language forms and structures. The data is very subjective, so it requires hesitancy in coming to conclusions that are too firm. I offer models and hypotheses for further inquiry from the introspections of my collaborators, not facts in the sense that a logical positivist would understand.

2.3. What about Discourse Analysis?

One of the main current approaches to the study of language and conversation in the classroom has been the use of Discourse Analysis. Thus the question arises for an inquiry such as this: 'why not use Discourse Analysis?'. There are critical distinctions to be made between NLP and Discourse Analysis. I believe that the most important difference is that NLP is essentially about modelling, which is as much about understanding people’s inner responses to communication, as it is about the structure of messages. Discourse Analysis, on the other hand, is a more descriptive way of analysing and classifying human communication (Chafe 1994, Silverstein and Urban 1996, Popkewitz and Brennan 1998, Yaguello 1998). It concerns itself with the minutiae of the structures of language, or the power relations inherent in it, (Popkewitz and Brennan 1998) but not with the complexities of the recipient’s conscious and unconscious responses, let alone the possible effects on these of different types of communication. Potter (1991) believes that Discourse Analysis comprises ‘a whole range of things,’ (Potter 1991:144). It is difficult to disagree with David Silverman’s (1993) suggestion that “because
Discourse Analysis is so heterogeneous, it is difficult to arrive at a clear definition of it,” (Silverman 1993:121).

There is another important distinction to be made between Discourse Analysis and modelling using NLP. Each arose from two different historical and theoretical perspectives, and thus have different foci. Bandler’s (Bandler and Grinder 1975) approach to modelling is rooted in Cybernetics, Information Theory, the philosophical insights of Russell’s logical levels and types (Russell 1921) as well the insights of modern linguistics and transformational grammar (Bandler and Grinder 1975A). The inquirer using this approach has to assume that any interaction between humans is complex and multi-dimensional, and based on an exchange of information within complex systems. These operate at many levels of complexity. Bandler and Grinder’s theoretical approach to modelling was partly developed from the theoretical frameworks of the sciences of complexity, including the emergent Systems Theory, as an approach to understanding complexity.

Checkland (1981) proposes that when complex systems are investigated, then “our basic model has to include both an external reality and an observer/describer who will, for his own purposes, use systems thinking as a means of arriving at his (sic) description” (Checkland 1981:101). So modelling uses both a systems or cybernetic approach, based on the assumption that communication is an integral factor whenever human beings connect with each other or engage in their own reflections and feelings. This in turn is perceived as part of a complex system of both conscious and unconscious processes. Discourse Analysis, on the other hand, arose from European post-modernism, and belongs more to the field of cultural studies, and does not, as I understand it, address the sciences of complexity as such.

Gregory Bateson was a member of the Macy Conferences from which the science of Cybernetics emerged.
Recently however Chafe (1994), whose approach is rooted in Discourse Analysis, has proposed that topics within a conversation display a hierarchy of sub-topics, but interestingly does not refer to Bertrand Russell’s theory of logical levels and types in relation to this. I am inclined to believe that it is not as powerful an approach as modelling as a method of inquiry into complex, interactive systems that are operating at many levels of complexity, and may involve both conscious and unconscious processes.

Much of Discourse Analysis claims to be about understanding human communication, and identifying genres of discourse, yet largely ignores the perspectives of Cybernetics, Information Theory and Systems Theory. It also seems unaware of the seminal ideas of Bateson (1972) and Watzlawick and Weakland (1977) who, inspired by Bateson, proposed that human communication and interaction were multi-level and dynamic processes. They proposed a new way of understanding healthy and pathological patterns of communication, and how they could influence others both consciously and unconsciously.

What NLP and Discourse Analysis have in common is that they both focus on patterns of language between people. They differ in that NLP provides tools for inquiring into the subjective effects of language, that is, how meaning might be created, rather than aiming to provide a typology of conversational genres. Potter (1991) states that “DA (Discourse Analysis) does not use talk and texts as a pathway to underlying cognitions; indeed DA resolutely steers clear of cognitive reduction” (Potter 1991:158). To understand more about learning, I believe that NLP was the more useful tool. It made room for considering the cognitive dimension to language and learning. It was also a challenge to use an approach, which has not yet been used at such a level of detail in an educational inquiry.
2.4. An outline of the data gathering phase of the research process.

"Knowledge does not end with moments of connectedness, understanding or meaning. Such journeys open vistas to new journeys for uncovering meaning, truth and essence – journeys within journeys within journeys" (Moustakas 1994:65.)

McNiff, Lomax and Whitehead (1996) urge the putative researcher to ‘be prepared for the unexpected’ (Mcniff et al 1996:40). This was certainly the case when I was invited to give a course in NLP at a hospital in the capital of a Middle Eastern country in 2000. My stay in this country lasted two months. It was not the first time I had visited it; I had taught the educational component of a degree in Nurse Education as a visiting lecturer in 1993 in 1994. I was then asked back on four different occasions to teach NLP to staff at the hospital under the aegis of their Post-Graduate Department of Education.

This particular stay was serendipitous in that it gave me an unexpected opportunity to explore my teaching of NLP, and to use the time and the people as collaborators in this research venture. Some of my students had already acted as a focus group for another PhD venture into NLP. Jan Robertson (2000) describes qualitative research as a complex activity. It involves both doing and reporting, and is not a tidy process, rather the opposite. This was certainly my experience of my ‘field work’ and after.

There were two separate phases to my information gathering. These were to develop into two different but complementary parts within the whole inquiry. The first was close to my original intentions which had been to use the time abroad to pilot my own interview schedule, and ‘try it out’ on people. I then intended to develop a more sophisticated version when I got back home to the UK. What actually happened was that I interviewed six of the students on the course, inquiring into their responses to certain language structures, originally to see what
happened. (I describe this interview schedule below). When I arrived back in the UK, I transcribed these interviews, and then realised that I had so much information that the ‘pilot’ became one of the main sources of information. My reflections on these are the main themes of chapters 6, 7, 8 and 9.

The second stage of the inquiry was to work with three people who had attended previous courses of mine, and had already reached practitioner status in NLP. These acted, in a sense, as what McNiff et al (1996) would call my validating group. They were also to engage on an information gathering exercise by interviewing some of the students who had attended the NLP course. This was to be carried out after I had left the country. It would include obtaining feedback from the participants on the course about a number of different aspects of their experiences of learning. I describe this phase of the inquiry, and my thoughts about it, in some detail in Chapter 10. Essentially, my collaborators and I were interested in feedback from the participants on the NLP course, especially in any changes that had occurred in their conceptual maps about themselves as learners.

The overall outcome for this inquiry was that I developed a new understanding of some of the processes involved in learning, which I offer as a hypothesis. As a result I hoped to perhaps be able to initiate changes in either the theory or praxis of my teaching, (and perhaps that of others). These are some of the characteristics that are said to define action research, (McNiff et al 1996, Gill and Johnson 1997, Robertson 2000. My research methods also arose largely out of the context in which I found myself.

When I set out to teach these NLP practitioner and Master Practitioner Programmes in 2000, I made it clear to all the participants at the outset that we were all involved in research, though to begin with I found it difficult to specify what exactly we were looking for. This was to ensure transparency. NLP is taught through exploration, group work and feedback sessions. Power issues, and questions such as
‘who owns the information that is uncovered?’ are important to post-modern qualitative research. I made it clear from the outset that we were all engaged in exploration and discovery, some of which would be useful to me for this study. Anderson (1990) stresses the need for honesty, avoiding deception, and obtaining informed consent as some of the pre-requisites of an acceptable ethical approach. When I was teaching, my focus was on enabling the students to meet the standards of Practitioner status in NLP. The overall framework for both myself in the context of being the trainer, and the participants on the course, was that of an exploration of themselves and others using the tools of NLP. This was, after all, what I was being paid for at the time.

2.5. Action Research

Much of this phase of the inquiry was illuminated by the approach generated by action research. It has been described as an approach where “researchers are intent on describing, interpreting and explaining events (enquiry) while they seek to change them (action) for the better (purpose)”. (McNiff et al 1996:13). Action research also involves reflection on practice, and I found that when I was engaged in teaching, I was mainly focused on guiding a group of ten people to the level of Practitioner. NLP is learned and taught through guided exercises and interactions with others in the group, and then shared reflection on what was discovered. The approach to teaching it is, in a sense, to ‘hand over’ the responsibility for learning to the participants, and to become more and more invisible, as it were, as their enjoyment and curiosity took over the process. It is deliberately taught as inductively as possible. The participants became fully engaged in their learning, and as I observed them becoming more confident with the exploration of their own subjective processes, and those of their peers, I soon realised that what was also emerging was a sample of people with a deeper awareness of their own internal

3 These standards are set by the Society for NLP, which is one of the many world wide accrediting bodies.
modelling processes, and how these were influenced by language. Most of them were nurses, and often reported that they had used NLP to make discoveries about their patients’ experiences on the wards. They also reported that they found it useful in information gathering, negotiating and reassuring.

One of the Master Practitioners, (who was also one of my assistants, and later one of the interviewers for the second phase of information gathering,) used his new insights to develop a more effective discharge planning procedure for his ward. If one of the hallmarks of collaborative inquiry is that professionals and non-professionals become co-researchers (Patton 1990) where the purpose of “such shared inquiry is typically to elucidate and improve the nature and practice in some arena of action” (Patton 1990:129), then it seems to me that what emerged was a kind of research team of more or less enthusiastic inquirers, sharing and applying their own insights in the contexts of their personal lives and work. Truly, serendipity is an essential component of research and inquiry.

McNiff et al (1996) warn that authentic research is “where you do not already have the answers [...] it means that you are willing and able to change your own understanding.” (McNiff et al 1996:13). About half way through the course, I started thinking more like a researcher than a trainer. I initially found it difficult to reflect on my practice as a researcher, until I realised that when I was actually engaged in teaching, I was more focused on the students’ learning processes than on myself and what I did. One of the aims of an NLP training is to develop people’s understanding of their own situation, and explore their abilities to make changes. This is not unlike what Lather describes as one of the hallmarks of research in practice, which is that “research (can be) consciously used to help participants understand and change their situation” (Lather, cited in Robertson 2000:311). Arhar and Buch (2000) describe teaching as a form of scientific

4 See Chapter 10
inquiry and a moral commitment to democratic relationships between teachers and learners. “Action researchers design their watching into their work, not only as an afterthought... but as a documented reflective process throughout”. (Arhar and Buch 2000:328). I believe that reflection on action may be as much an unconscious as a conscious process, an issue which most writers on research design and methods ignore.

My own approach to teaching is greatly influenced by the training I underwent to achieve the status of NLP trainer. Among the most important skills to be developed are the ability to enthuse one’s learners and to enable them to acquire insights into language. This includes Bandler and Grinder’s (1975, 1975A) model of language. This proposes ways in which language may guide people’s thinking. Other important aspects which are developed are the ability to facilitate people to learn for themselves, and to create relationships which act as a context for safe, rapid, and sometimes surprising insights to occur. Entwistle and Smith (2002), inquired into the factors that promoted what they term ‘deep’ learning’. They found that students reported that the qualities of a lecturer, which were most likely to bring this about, were explanation, enthusiasm and empathy. These generalisations echo some of the prescriptions for ‘good’ NLP training.

Lincoln and Guba (1985) propose that the design of a piece of research “designates nothing more than a broad plan relating to certain contingencies that will probably arise, but the precise nature of those contingencies is unpredictable” (Lincoln and Guba 1985:259). This echoes what happened to this study at the beginning. What I originally thought of as a pilot study emerged from a hunch, which came to me about half way through the course. What if I ‘tested’ these people’s responses to a number of different statements by asking them for their responses to certain language structures where they would talk to me about the results of their introspections? I now had a sample of over a dozen highly trained people with considerable
considerable insights into some of their own thinking processes. I might never have such an opportunity again.

This fitted into the category of purposive sampling, which Silverman describes as a sample which “allows us to choose a case because it illustrates some feature or process in which we are interested,” (Silverman 2000:104). Lincoln and Guba (1985) suggest that one of the characteristics of purposive sampling is what they term emergent sampling design where there can be no a priori specification of the sample, and that naturalistic sampling is based on informational rather than statistical criteria. These reflections of my sampling are made a posteriori; at the time I was only interested in developing and testing a pilot interview schedule, without realising that the data so obtained would more than illuminate my inquiry. What I was consciously looking for were people who had developed the ability to report on their own introspections, and who were unafraid to share them with me.

One of the first activities in the NLP Practitioner’s course was to encourage people to explore how we use our senses internally to structure subjective experience. Bandler and Grinder (1975) suggest that we use all our senses to re-present experience internally as internal representations. Thus when we think, we see, hear, feel, taste, smell, and perhaps use other senses as well.

I introduced this aspect through telling a story, (see Appendix 1) which was deliberately written to stimulate the listeners’ five sensory modalities, so as to generate rich internal representations, and draw attention to them. This was an approach much loved by Milton Erickson, (Erickson 1980, Rosen 1982). The structure of stories seems to be able to influence people’s thinking at the unconscious level (Gick and Holyoak 1977) and engage people in abductive learning (Bateson 1972). Erickson believed that the power of metaphors lay in their ability to make the topic ‘come alive in’ people’s minds.
After I told the story, the group was asked: "as you were listening to the story, what sort of images did you make? What did you see?" This was to encourage participants to look more deeply at their own internal responses to the story, through a process of shared introspection in small groups. People usually respond by talking about what images they made internally. I then sometimes ask questions like "was it in colour or black and white? Was it a movie or a series of stills, were you in it experiencing it or outside, looking in on it?" This was so as to elicit information about the different characteristics that their internal images seem to have. Whenever I have used this approach, people have always reported on the quality of the imagery produced by such stories. I then asked "as you were listening to the story, did you hear any sounds internally?" Again, many report that they heard sounds (for instance the grunts of the camel). I then asked about bodily sensations, tastes and smells. Some felt the heat of the desert as they listened to the story. Others experienced states such as curiosity, pleasure, relaxation or interest. Often they reported to have been aware of the taste of the water or the smell of the old goatskin. NLP training presupposes that this is one way that people can develop a greater awareness of their own worlds of internal representations. Interestingly, many participants reported an increase in the amount of vivid dreams they had at this stage of the course.

5 The effects of such developing insights was described by one of the participants, a twenty eight year old Nurse Tutor H. who was interviewed by one of the Master Practitioners. These were also acting as my assistants on the course. The interviewer asked her for her impressions at the beginning of the NLP course. Her reply indicates something of the surprise she felt at discovering so much more about her own internal world, particularly at the level of internal representations.

H. The way she spoke the way she engaged discussion from the group, the way how she’d... think... 'imagine yourself there, see yourself there, see what you see, hear what you hear, feel what you feel'. We’ve never had that taught, like in that second go back into thinking of that certain scenario it’s like certain scenarios like wow, I’ve got it in stills, I’ve got it in certain pictures, I’ve got it in movie, I’ve never been taught that before.
The story itself also had another function; to create a metaphorical framework for the philosophy of the course. The theory is that the structure of stories has the ability to by-pass the conscious mind, and influence how subsequent information is then structured, (Gick and Holyoak 1977, Erickson and Rossi 1989). I review some of these aspects further in Chapter 4. One of the things that the NLP training was designed to do was to produce a small population of people who were practised in introspection, and the sensitive elicitation of their own and other people’s internal processes. The sample, and the questions for what I thought of as an initial set of explorations, emerged from my reflections on the responses of the participants on the course.

2.5.1. The Pilot Interviews, which then became a surprisingly important source of information

In the last two weeks of my stay I designed what I then believed was the pilot interview schedule. This consisted of a number of different statements, in response to which I wanted my collaborators to reflect on the internal processes that they produced. (These are described in some detail in Chapter 6, 7, 8 and 9.) What kinds of statements could I use as probes? These questions became the catalyst for the emergence of my interview schedule. Patton states that the purpose of interviewing is to find out what is on someone else’s mind, (Patton 1990), and that “the persons being interviewed respond in their own words to express their own personal perspectives” (Patton 1990: 278). Silverman warns that it is important to ensure that one’s analytic position is appropriate to one’s practical concerns, (Silverman 2000).

I wanted to find out whether it was possible for people to be capable of an introspection which was deep enough for them to report on their own responses which might ‘normally’ lie outside ‘normal’ awareness, yet keep them emotionally safe. The question that then arose was:
would I then be able to model how thinking was influenced by language? Bateson was fascinated by the possibility that we know what we know, yet are not aware of how we know it. I wanted to know what would happen if I aimed at questioning people in such a way that they might reveal aspects of how they know. This was one of my main outcomes for this inquiry.

This led to the need to recognise that there were important theoretical distinctions to be made between what people knew, and the processes by which that information was represented to them. Denzin and Lincoln point out "not only are facts determined by the theory window through which one looks for them, but different theory windows might be equally well supported by the same set of facts..." (Denzin and Lincoln 1998:199). Thus my theoretical standpoint was mined from the bedrock of Bandler and Grinder’s model of language and their proposed epistemology, which in turn determined how I formulated the pilot interview schedule. It was also based on the notion that people could access some of their internal processes where they had used their senses to reconstruct experience, (Bandler and MacDonald 1988). (I explore and describe some of these aspects in greater depth in Chapter 3.) At this point my main question was ‘what happens inside people’s minds when I use particular language structures?’ Might there be differences in people’s responses to these?

The interview schedule that emerged, as the result of my reflections and questioning, fell into what Patton (1990) characterises as “a standardised open ended interview, where the exact wording and sequence of questions are determined in advance. All interviewees are asked the same questions in the same order. Questions are worded in completely open ended format.” (Patton 1990:289). I then followed up people’s answers with probing questions in order to elicit more

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6 “It seems to be a universal feature of human perception of the underpinnings of human epistemology that the perceiver shall perceive only the products of his perceiving act. He shall not perceive the means by which that product was created” (Bateson, In Donaldson 1991:216),

7 This is explored further in Chapters 4 and 5.
information about the effects of my words that people reported they had experienced. Patton describes probes as questions that are used to deepen a response and increase the richness of the data being sought, (Patton 1990).

This part of the data gathering used an approach that Gill and Johnson (1997) refer to as a quasi experiment. Here the prime aim is to analyse causal relationships between independent and dependent variables, where subjects cannot be randomly assigned to control groups. Anderson (1990) describes it as an approach “where there is an artificially manipulated treatment, but where randomisation is not possible”, (p. 129). This seemed to be appropriate to a phenomenological inquiry, as it had the potential to uncover subjectively experienced processes, with the caveat that it is epistemologically dangerous to draw too many generalised conclusions from data so obtained. Thus any model that emerges from such an inquiry essentially has the status of a hypothesis or preliminary working model, which can then act as a heuristic device for further elucidation of the phenomena under scrutiny.

Each question thus required interviewees to engage in deep introspection, then describe and reflect aloud on their own responses and whatever processes they then became aware of. In a sense they were to take what has been described as the transcendental phenomenological attitude, as part of their responses, (Sokolowski 2000).

2.5.2. Designing the pilot interview schedule

...In describing a given system, the scientist makes many choices, He chooses his words, and he decides which parts of the system he will describe first; he even decides into what parts he will divide the system in order to describe it. These decisions will affect the description as a whole in the sense that they will affect the map upon which the typological relations between the elementary messages of
the description are represented. (Bateson, in Donaldson 1991:62).

When one is engaged in modelling, the main task is the elicitation of information from others at both verbal and non-verbal levels, in order to find out more about how they respond and construct information for themselves. So, when NLP is being used as a modelling tool, it is assumed that what is being interrogated is not the world of external reality, but a deeply subjective, internally constructed complex of thought processes, of which emotions, images, goals, values, memories, sounds, speech, bodily sensations, tastes and smells form integral parts. This involves the researcher in very precise and sensitive questioning of participants who are willing to share in the exploration of these levels of experience. This is what I mean by guided introspection. Questions designed to bring to awareness the structures that people may be using to ‘map’ experience requires interview skills and the ability to enter into the world of the other, yet stand respectfully aside. It also involves a precise and skilful use of language and observation. This I based on Bandler and Grinder’s meta-model of language, (Bandler and Grinder 1975). I have often experienced feelings which I can only describe as reverence and awe when a participant shares her surprise and delight at discovering more about her own, previously un-accessed internal processes and resources.

What follows is the interview schedule, which I originally thought of as a pilot project, to be refined at a later time. I explain below what my rationale was behind each of the questions; what I wanted was for my interviewees to tell me about the subjective effects of the various statements at the level of their internal representations and sub-modalities. Although I explore Bandler and Grinder’s (1975) idea that thinking involves the use of all the senses in the construction of internal representations further in Chapter 3, a quick summary of these ideas maybe useful at this point.

Bandler and Grinder (1975) and later Bandler and MacDonald (1988)
proposed that we re-create experience internally, as it were, using all our senses. So as we think, we also see, hear, feel, perhaps taste and smell, whatever experiences we are reflecting on. Thus our senses *internally represent* experience, often below the levels of immediate awareness. Sub-modality distinctions (Bandler and MacDonald 1988) are the characteristics of each sense; for instance, internal images may be in colour or black and white, sounds may be loud or soft and feelings (usually termed kinaesthetic responses in NLP) may be warm or cold, hard or soft, and may even be experienced as having a location within the conceiver’s body.

It was this level of awareness that I wanted my interlocutors to report on in response to the language structures in the interview schedule. I sought information about their *processes*, not their responses to the *content* of my words. This part of the inquiry is as much about exploring these levels of consciousness and how they may be involved in the construction of knowledge, as it is about the effects of language. There is no ‘logical’ sequence to the schedule described below; I simply wanted to explore a number of different aspects in no particular order. Many of the technical terms, and my thoughts about them, are described in greater detail in Chapters 4, 5 and 6.

The transcripts of the responses to questions 3, 4, 9, 10 and 16 are analysed and reflected on in Chapter 6. Chapter 7 are my reflections on the transcripts of the responses to questions 5, 7, 8, and 12. Chapter 8 reviews what I found in the transcripts of questions 8, 6, 11 and 13. Finally, Chapter 9 reports on my analyses of the transcribed responses to questions 1, 2, 14 and 15. These were natural groupings, which emerged after I had read the transcripts several times.

**2.5.3. The interview schedule**

Below I list the questions that I finally used in the pilot study, and the thinking that led to them. I include at the end, for the sake of
completeness, some questions which I realised after the first few interviews were repetitive or inappropriate, and therefore left out in my analysis of the transcripts.

**Question 1.**

This question was designed to explore the difference between the injunctions to ‘think’ and ‘remember’. I was also curious to know whether the word ‘think’ was more likely to produce a dissociated response, and the word ‘remember’ an associated response. So people were asked for their responses to the following two suggestions.

a) *Think of a time when you were happy.*

b) *Remember a time when you were happy.*

**Question 2.**

It has been claimed that there are two fundamental ways of attending to information. (Bateson 1972). One is to attend to *difference*, and the other to attend to *similarity*. With this question I wanted to explore how the internal representations of some familiar objects differed when the subject was asked to attend to their differences, and then to their similarities.

a) *How are apples and oranges different?*

b) *How are apples and oranges the same?*

**Question 3.**

With this question, I wanted to explore moving from a phrase which asked about the process *how you relate*, to a phrase where the verb had been nominalised. (Bandler and Grinder 1975) This turns what
was, for the conceiver, originally a process into an abstract noun. According to Bandler and Grinder (1975) the original activity of the verb is thus deleted. I also changed the wording of the initial command from 'be aware' to 'think' in the second question, to find out what would happen.

a) Can you be aware of how you relate to someone you value?
b) Can you think of a relationship with a person you value?

**Question 4.**

This was a rather ambitious question, where I wanted to explore the differences between 'scientific text book language' about the human heart, and a more emotive personalised description. The first part has more nominalizations, and is expressed in the third person. The second part takes the perceptual position of the second person and uses more verbs rather than nominalizations.

a) In the heart, the ventricles contract to pump blood around the body. The atria receive blood from the body. Closure of the valves at the bases of the main arteries prevent the backflow of blood on ventricular relaxation.

b) Your heart is a pump and receives blood from your body and pumps blood around your body. Imagine your ventricles contracting and squeezing blood into the main arteries so they need valves at their base that close so that blood isn't sucked back when the ventricle relaxes.

**Question 5.**

In this set of questions I wanted to explore the effects of a group of words known as modal operators (Bandler and Grinder 1975) on the internal representations that would be elicited. Modal operators are a complex group of words which have been described (Hall 1996) as
'words that express the contingent relationships we believe to exist between ourselves, others and outcomes'. I describe them in greater detail in Chapters 5 and 7. This group of words can be said to describe the mode in which a future activity is to be carried out. It has been claimed (Hall 1996) that some modal operators (such as you will, you must) imply that the listener is at effect, or at a reactive stance. Others, such as ‘you might’ or ‘you could’, imply that there is a choice. This is thought to place the listener into a more pro-active position. Part of the interest in modal operators is that there is always an implied causality to them, which can be uncovered by questions such as ‘who says’, ‘what would happen if you didn’t’ or simply by using the word ‘because?’ as a question to elicit further information about the activity defined by the modal operator.

Think of something quite ordinary, (like cleaning your teeth) that you are going to do in the near future. What happens when I say:

- a) you will do it
- b) you might do it
- c) you can't do it
- d) you should do it
- e) you can do it
- f) you could do it.

**Question 6.**

Here I wanted to explore what happened when my collaborator was asked to change temporal frames. First each was asked to think of an event in the near future, then to perceive it as if it were now in the past. The injunctions place the information into two different temporal frameworks, one future, and one past.

- a) Think of something you have to do but are not sure you particularly want to do.
b) Now imagine you were in the future having done it.

Question 7.

With this question I wanted to find out about some of the effects of the question ‘how do you feel about it’ on the subject’s memory of a mildly unpleasant experience. The word ‘feel’ is a sensory predicate (Bandler and Grinder 1975) and it is claimed that the use of this word can amplify existing kinaesthetic responses in the internal representation of a memory.

a) Remember a mildly unpleasant experience.

b) How do you feel about it?

Question 8.

Here my aim was to explore the effects of the word ‘but’ when used to link two separate statements in the context of feedback on a person’s performance. In sections a) and b) I also wanted to find out what happened when the first and second halves of the complex sentence, changed places. In the third part c), I wanted to explore what happened when words implying a causal linkage (...so that you can...) between the two halves of the sentence and deliberately linking them to a future outcome, were included.

a) You are good at NLP but you need to work on your rapport skills

b) You need to work on your rapport skills but you are good at NLP

c) Think about your rapport skills so that you can be even better at NLP
Question 9.

With this question I wanted to see whether there were any differences in response to the adverb (wrongly) and the adjective (wrong) used in the same context. Hall (1996) claims that adjectives digitalise information, whereas adverbs are analogical, giving a sense of an activity, which the conceiver experiences as part of an on-going temporal continuum.

*Think of something you might have done better.*

a) you did that wrong

b) you did that wrongly

Question 10.

With this question I was exploring wording a command three different ways so that three different perceptual positions were implied in the phrasing, yet all referred to the same topic. The first a) uses the nominalisation ‘childhood’ which is an abstract noun. The second b) uses the word ‘being’ which could produce association into the event, and in the third c) I was curious about whether there would be different responses to the instruction ‘remember yourself as...’.

a) Remember your childhood.

b) Remember being a child.

c) Remember yourself as a child.

Question 11.

The intentions behind this question were to explore the effects of directing the other to look at information (about something they did really well) in different ways, first by asking them to think about how they could make something even better, (which presupposes that it was good in the first place) and then requesting them to consider it in
a totally different way, directing them to search for information that they were not (yet) paying attention to. This question was dropped after the first two interviews because the subjects seemed to be confused by b, and confusion was not what I wanted to explore at this stage.

Think of something you do really well.

a) how could you make it even better?
b) what are you not paying attention to?

Question 12.

With this question I was interested in the effects of the word ‘yet’ placed at the end of a negative injunction. The word ‘yet’ is both a linkage word and a phonological ambiguity, (Bandler and Grinder 1975A). It also presupposes an on-going process by introducing a further time frame through presupposition.

Imagine something you might do. How do you respond when I say:

a) you can’t do that, or
b) you can’t do that yet

Question 13.

Here I was interested to find out the effects of using questions beginning with what and how, then why, to explore whether these produced different internal responses when applied to the same content, i.e. a goal in life. Question d) aims to move the conceiver’s perceptual position from present looking forward, to future looking back.
The last question f) aims to find out whether having considered the previous questions had in any way altered the internal representation of the subject’s goal.

*Think of a goal you have in your life:*

a) what do you need to achieve it?  
b) how will you achieve it?  
c) why will you achieve it?  
d) what will it be like to have achieved that goal?  
f) Now think of the goal again? What happens?

**Question 14.**

It is claimed that human consciousness cannot compute a negative, (Erickson 1980) but must always first make an internal representation of what is to be negated, in order to then negate it. The aim of this question was to explore the effects of negative injunctions on internal representations. People were asked for their responses to each of these statements.

a) Don’t think about failure  
b) You must not imagine a blue camel  
c) Don’t make that mistake again.

**Question 15.**

What interested me with this question was whether the command to ‘think about’ as in sentence a) produced a different response to the question using an awareness predicate (feel) in question b.

a) think about how much you have learned  
b) are you aware of how much you have learned?
**Question 16.**

This is another attempt to elicit different responses to nominalised and de-nominalised information. Thus the word ‘communication’ is an abstract noun obtained by the transformation of the verb ‘communicating’. In this process the action of the verb is again deleted, (Bandler and Grinder 1975).

\[
\begin{align*}
\text{a) It's important to understand communication.} \\
\text{b) It's important to understand communicating.}
\end{align*}
\]

**2.5.4. Questions that ended in the recycle bin**

In retrospect, I believe that some questions were thought up too hastily, as I really believed that the data that I would gather would lead me to design a more effective schedule. I give them for the sake of transparency about my own research process. When I realised that they seemed inappropriate, I consigned them to the recycle bin.

The question below was used with some of the interviewees. I stopped using it, because the answers seemed somewhat complex. In fact the few people I asked did, on reading the transcripts, yield some interesting insights.

\[
\begin{align*}
A. \text{How are apples and oranges different?} \\
B. \text{How are apples and oranges the same?}
\end{align*}
\]

In the next question, I left out C.

\[
\begin{align*}
A. \text{Think of something you do really well.} \\
B. \text{How could you make it even better?} \\
C. \text{What are you not paying attention to?}
\end{align*}
\]
2.6. Ethics and research protocols.

The interviews were carried out after the end of the course and the assessment. This was to distinguish this part of my activities from the teaching, so that students' assessment and my own research were clearly distinguishable. I was careful to interview people several days after the end of the course and the presentation of certificates. I chose people as much on the basis of their availability in a busy hospital setting, as on my judgement of their willingness to share their (sometimes strange) introspections. Each person was interviewed in private, either in a teaching room in the hospital complex, or in their own homes. The interviews were tape recorded, and transcribed on my return to the UK. I include a sample of one whole transcript in Appendix 3.

McNiff, Lomax and Whitehead (1996) have published a checklist for ensuring that the research protocol follows ethical guidelines. Among the first is to negotiate access with the authorities. I obtained written consent from the Head of the Hospital Programme to carry out this research. This is included in appendix 2. I also asked each participant to sign a consent form in which they gave me permission to use the material for this research study, and which also informed them that any material that they did not want to be included would be withdrawn. The form also assured them of their complete anonymity, and confidentiality. Patton (1990) emphasises the necessity for this. These consent forms are also included in Appendix 2. The names of all the participants have also been changed to ensure anonymity.

Before the interviews, each person was told that they could stop the interview at any time that they wished, and withdraw from the sample. This was to ensure participants' right to withdraw from the research, which is one of the aspects listed by McNiff et al (1996). It is also important to protect participants from any harm or distress, so I made it clear during the interviews that we were not there to uncover unhappy memories, but to explore their responses to
language. So on the one occasion when one of my collaborators did access an uncomfortable childhood memory, I made sure that she was able to 'leave it behind' and stay safely in the present, by reassuring her, and gradually moving her into a more confident state. She also knew that she could stop the interview, and even withdraw from the research at any time.

McNiff et al (1996) also recommend that others involved in the research should be kept informed. Unfortunately it was not possible to do this with all the participants, as a few weeks after my return I was hospitalised for some time, and then endured several months of convalescence. Many of the participants had by then left the country, and changed their email addresses. Communication with people in the Middle East became problematic because of the changing world political climate. However, I was able to check some of the transcripts by email with one of the participants, ('Edward'), who was also an assistant on my course. He later engaged in some further interviewing for the second phase of my data gathering. The account of this, and the analysis of the resulting transcripts form the main subject of Chapter 10.

2.7. Concluding reflections.

These interviews were designed to elicit information about some deeply subjective processes in my participants. Gregory Bateson’s cybernetic thinking, which forms one of the theoretical backbones of NLP and this inquiry, proposed that units of behaviour are defined by the structure of the experiment. (Bateson, in Donaldson 1991:74). What follows from this is the ontological impossibility of any separation between observer and observation. The observer and that which is observed becomes one interactive phenomenon only possible through the act of knowing. The researcher, as it were, brings a phenomenon into being through the act of inquiry. According to Bateson, any inquiry is "an action [...] cut out from the flow of behaviour, through the act of perception" (Bateson, in Donaldson
An inquirer becomes "... partly blown by the winds of reality and partly an artist creating a composite out of the inner and outer events". (Bateson, in Donaldson 1991:223). Introspection and reflection become an essential part of this approach, for "... every discovery concerning human behaviour in the external universe is also a discovery about the self, and often an unwelcome discovery in that inner field". (Bateson, in Donaldson 1991:247).

What this approach makes possible is the ability to make distinctions between what Bateson thought of as logical types. For instance, it becomes easier to distinguish between process and content, description and explanation, abstraction and sensory experience, different levels of abstraction, or observation and projection, because they are considered to be different logical types. Bateson also introduced the fascinating possibility that learning occurs at different levels, so there can be learning, and learning about learning, and learning about learning about learning, just as there can be reflection, and reflection on reflection, and so on. Because these are different logical types or categories, it can be predicted that one can draw distinctions between them. A research project may then become as much about researching into research, as about research itself. Such self-reflexivity is one of the hallmarks of cybernetic systems.

Cresswell (1998) notes that every model implicitly generates presuppositions about its ontology, epistemology and methodology. Bateson’s ontological view was that information was the fundamental organising principle of the universe. Bateson told his students "I want you now to start thinking in terms of biological systems or universes which are organised by information, i.e. by significant differences rather than by forces or impacts." (Donaldson 1991:178) Thus there is a clear distinction to be made between the ontological presuppositions of the mechanistic scientific tradition, which believes that everything is reducible to particles and forces, and Bateson’s views on the primacy of information. In this model, information is
itself organised into different logical levels. It is thus itself the subject
of being organised by information, in an almost fractal way.

And this was only the beginning.
Chapter 3. Of Maps and Models, Phantasmagoria and Simulacra.

Philosophy of the mind, traditional experimental psychology, communication theory, systems theory, computer science, linguistics and neuroscience have all played important roles in the shaping of this research area – changing its focus, providing new theoretical concepts and supplying integration metaphors as explanatory tool. [Out of this has arisen] cognitive modelling. Explanations of human cognition are expressed as abstract models based on the conception of a human brain as a physical symbol system consisting of a representational system and the processes which manipulate it. (Aitkenhead and Slack 1985:IX).

We must bear in mind Wittgenstein’s reminder that the diverse phenomena that are found within the domain of the words ‘conscious’ and ‘consciousness’ may not be unified by a common essence.” (Harre 2000:234).

3.1. Introduction

My research up to now has increasingly led me to inquire into the processes that people use to explain, understand, dream, make sense, achieve goals, learn, reflect, and respond to external stimuli, including language. This is at the heart of my investigation, and I intend to offer another model of some learning processes, which may be involved in the construction of knowledge. I explore the ways in which these may be linked to language in Chapters 10 and 11. These emerged from my reflections on the data I had collected, and its analysis.

This chapter is a review of some of the ideas from the more recent literature about our cognitive processes. Making sense of how we make sense internally has remained a challenge to educational and cognitive psychology for the best part of the last century. It is
dominated by questions such as: what are the internal processes that are necessary for us to operate successfully in the world? What do we do 'inside our heads' that enables us to construct our conceptual maps and act on them? How do these processes influence learning?

There are four main sections to this Chapter:

1. I address some theories about mental models and related domains, including a consideration of the cybernetic approach.
2. I review the possible contribution of NLP to our understanding of mental models, and a comparison with other approaches,
3. I consider the processes of abstraction and categorisation, and their roles in the formation of our cognition.
4. I include a short review of some of the principal ideas about unconscious information processing.

### 3.2.1. Mental models, internal representations, cognitive maps or constructs; a rose by any other name...

The notion that we possess cognitive maps is usually attributed in the psychological literature to Tolman (1948) who proposed that the nervous systems of organisms were able to produce some sort of internal spatial re-creation of the world around them in order for them to find their way around their territory. However, this idea goes back further, to the work of Korzybski (1958) who first published his views in 1941 that human beings have internal maps, which may be linked to language. Gregory Bateson was particularly intrigued by the epistemological implications of such internal ways of sense making, (Bateson 1972). Bandura, one of Bateson's coevals, was urging people to recognise the relevance of the study of conceptual models to learning: “It is surprising that traditional accounts of learning contain little or no mention of modelling processes” (Bandura 1971:2).

One of the main problems facing any reviewer of this field is the question of nomenclature. Wittgenstein mused that “nothing is more
difficult than facing concepts without prejudice, and that is the principal difficulty of philosophy” (Wittgenstein, in Kenny 1994:177).
The area known as cognitive psychology, from which much of this chapter is drawn, attributes a distinctive meaning to the word cognitive, and embeds it in a distinctive paradigm, or way of thinking. The framework of most cognitive psychology is Cartesian, positivistic, and based on reliance on the results of experiments that are mostly carried out within the empirical, objectivistic and nomothetic tradition. The meaning of the word cognition that emerges from this is one where knowing is an almost platonically idealistic mental process, undistorted by gross feelings, values or the ever present danger of subjectivity. It is also one where it is easy to conclude that the nervous system alone is the chief mediator of knowledge, ignoring the possibility that individuals may use many other parts of their bodies to know, and to process information. The latter belongs more to the field of cybernetics, which has, in the main, been ignored by mainstream psychological inquiries. Its essence is to understand phenomena as complex wholes, not reducible to parts, depending on information for their functioning, and responsive to feedback. Patton (1990) has pointed out that neither objectivity or subjectivity are useful as concepts.

When I turned to the Concise Oxford Dictionary for a definition of the term ‘cognition’, I found, to my surprise, that it allowed for a rather broader view. **Cognition: (noun) the mental action or process of acquiring knowledge through thought, experience, and the senses. > a perception, sensation or intuition resulting from this.** It then informs me that its origin is from the Latin cognoscere, ‘get to know’. Furthermore, the word cognitive is an adjective relating to cognition. Although the dictionary defines cognition as a ‘mental’ process (this is only to be expected; Cartesian/platonic dualism is embedded in our language!), it does not exclude the role of sensation (which I take to refer to a neuro-physiological function mediated solely by the body). It also includes the role of experience, which again, is not just a mental phenomenon. It goes on to include intuition within the bounds
of the definition of cognition. The definition of intuition seems to have been a challenge to many researchers, (Clarke and Mackaness 2001, Perrig and Wippich 1995), and may long remain so.

The terminologies that have been used to explore such internal 'mental' phenomena present us with a veritable Tower of Babel of nomenclature. There are a number of different terms used in the literature to describe the inner worlds of human information processing. As far as I can make out, they all seem to be addressing the same issue, perhaps from slightly different vantage points or from within differing conceptual models. Miller et al. (1960) introduced the term 'plans' into the literature. Johnson-Laird (1983) and his co-workers favoured the term mental models. Piaget (1953) used the term 'mental image'. Sutherland (1992) preferred the term 'mental constructs'. Zhang and Norman (1994) used the term 'representational system', and 'internal representation', though in a different sense to the ways in which Bandler and Grinder understood and used the term. Fauconnier and his school describe internal processes as interacting 'mental spaces' (Fauconnier 1994, Koenig 1998). Jackendorff (1996) and Gibbs (2001) use the term 'mental representations'. In the literature (for instance Fauconnier 1997, Martin 2000, Kerzel et al. 2001) the term 'cognitive map' is frequently found. Cause mapping is another approach used by many. This seeks to understand thought and action in terms of the cognitive patterns of cause and effect, (Weick 2001). I use a number of terms interchangeably; the only caveat is that when I use the term 'mental', I use it metaphorically rather than dualistically.

Whatever confusion this variety of nomenclature produces, the exploration of how people code and process information remains a vast and complex area for inquiry. This project centres on the question of how we can find out more about people’s internal mapping processes, and the possible role of language in our mysterious sense making procedures. The question of what to call these processes (or structures) remains important. Despite Wittgenstein’s provocative
statement that “we are unable clearly to circumscribe the concepts we use, not because we don’t know their real definition, but because there is no real ‘definition’ to them. To suppose that there must be would be like supposing that whenever children play with a ball they play a game according to strict rules,” (Wittgenstein, in Kenny 1994:119).

My own preference is to use the term cognitive maps, or mental constructs to give the reader some idea of the development of my own thinking, despite the Cartesian baggage these terms may carry. My own meaning of the term cognition is that which refers to a process of knowing in which the whole of the system of an organism may be involved, and which may be explored in a multitude of different ways.

Our concepts, or cognitive maps could be defined as the abstractions that we use to make sense of our life’s experiences. The term ‘map’ is sometimes very useful; Tolman (1948) suggested that the central nervous system produced internal spatial representations that acted as maps enabling animals to find their way around their terrain. Since then the meaning of the term has expanded to include both internal ‘geographical’ maps as well as the more abstract patterns of information that enable people to make sense of their worlds. The term has since expanded its meaning. It is still used in the geographical sense, such as in the work of Golledge et al (2000) who propose that “cognitive maps are the internal representations of experienced external environments, including the spatial relations among features and objects” (Golledge et al 2000:93). Others include Yeap and Jefferies (2000) who propose a model for the development of spatial maps in people. The notion of mapping has come to be included in models about how we think, (Gattis, 2001, Liben 2001). The term ‘map’ was also much loved by Bateson (1972) who often used it to describe the processes that we employ to build up our knowledge of the terrain of our existence.
3.2.2. Constructivism and cognition

Entwistle and Smith (2002) have proposed that the ‘present fashion’ (sic) in education is constructivism. Constructivist theories present learning in terms of the development of an individual’s unique understanding through how they have ‘structured’ knowledge. There is increasing interest in how learners actually construct their cognitive maps when engaging in learning. Constructivism is based on the central tenet that humans actively “build” their internal models or representations of the world of their experience. My own approach could be seen to be within this movement, as I inquire both into the nature of people’s internal conceptual worlds, and the roles that language plays in their formation. The emergence of the constructivist movement and its main players has been reviewed by Sutherland (1992) who stresses the importance of developing our understanding of the role of language in the development of mental constructs. He also relates constructivism to the emergence of new approaches to the teaching of Science, such as the Cognitive Acceleration Science Education, (CASE).

Perhaps the main originator of our present understanding of the importance of our needs to create constructs as part of learning was Piaget, (1971) who, in acknowledging his debt to Kant, wrote that:

‘...intelligence is not limited to receiving impressions like a tabula rasa, but structures reality by means of a priori forms of sensibility and understanding’. (Piaget 1971:57.)

He further held that ‘the mental image [...] owed its formation to an internalised imitation’, (Piaget 1971:132). Learning theory has been greatly influenced by Piaget and his followers for the last half century, and has dominated much research into the development of children’s logical abilities as they grow through different stages to maturity, (Beilin 1992). Doolittle (2003) has reviewed some more recent developments and applications of constructivism to teaching and
learning theory. He has also suggested (Doolittle 2003, 2003A), that constructivism, having become the main explanatory metaphor system in contemporary learning theory, needs integrating with cognitivism, and could be further illumined by complexity theory.

Jonassen (1999) urged that mental constructs still needed further investigation, particularly in relation to how learners built up advanced knowledge. Martin et al (2000) have, for instance, used concept mapping and interviews to compare the internal strategies of successful and not so successful learners. Lancaster (2000) suggests that the impetus to generate models is probably the most fundamental point of connection between spiritual mysticism and psychology. Clarke and Mackaness (2001) have used cognitive maps to isolate the intuitive elements of managers’ intuitions, and how it might be that intuition ‘cuts through’ to the essence of a situation. Weick and Bougon (2001) suggest that maps are epistemological structures which are intimately tied to thought and action. Liben (2001) suggests that cognitive maps are essential to thinking. She distinguishes between a cognitive and a cartographic map; in a cognitive map the medium is both internal and metaphorical. Cognitive maps are thus the more complex of the two. Van Dijk (1997) brings in the dimension of language, suggesting that mental models are “the point of departure of all text and talk” (Van Dijk 1997:189).

3.2.3 Modelling learning, and learning modelling.

Interest in modelling learning emerged as part of the development of constructivism. In the 1970s, Norman (1977) argued that all cognitive systems had to have an internal model of the environment, of their self and of others in order for there to be any intelligent interaction between humans and the external world. He stressed that the nature of these cognitive systems needed to be the focus of many different lines of further inquiry.
Rumelhart and Norman (1985) focused mainly on how learners learn. They proposed that information within human memory consists of active structural networks with their own complex and dynamic characteristics. They stress that in such representation systems "the processes that evaluate and interpret the representations are as important as the representations themselves." (Rumelhart and Norman 1985:20) These, they proposed, behaved somewhat like templates for organising information. Their origins involved the aggregation of a complex of information into nodes, (possibly mediated by the nervous system) then the naming of these with words, as well as organising and structuring data on the basis of similarity and clusters around prototypes, distinguishing differences, parsing, ordaining cause effect relations, creating connections, ordaining intentionality, quantifying, and defining subject-object relations. They also believed that language played a part in these complex processes. They suggest that it manifests as semantic networks in the central nervous system and was integral to human information processing. They also refer to a representation as a map, which is something that stands for something else, and which can be used without reference to the phenomenal world.

Such mental models are considered to be important to learning theory. Nelson (1996) has explored the possible roles of language in the construction of what she calls Mental Event Representations (MER). She believes that 'by building representations of environments on the basis of individual experience, a general "world model" is constructed that guides individual actions, (Nelson 1996:17). She recognises that language has an important role to play, claiming that MERs change during an individual’s development as the result of acquiring language. She also suggests that the way in which people are spoken to during their early development affects what and how they remember.

However, nearly a decade earlier, Oatley (1977) had proposed that thinking about anything involved the internal manipulation of
something that was re-constructed by human thought, rather than purely interacting with the environment.

“Cues in the environment and used to address and guide an internal model or representation, within which symbolic inferences are made about the outside world and actions that we might take towards it” (Oatley 1977:547)

Rumelhart and Norman, (1985) having explored similar ideas further, suggested that:

The most important point about a representation is that it allows us to reach conclusions about the thing being represented by looking only at the representing world. (Rumelhart and Norman (1985:17).

Johnson-Laird, working in the field of cognitive psychology, (1983, 1983A) also suggested that mental models were indispensable to the process of learning and understanding. He believed that there were at least two levels to this process. One was the actual construction of a working model in the mind, which was, in his view, always limited. At the second level, there was the possibility of constructing a working model about a working model. He further distinguished between propositional representations and mental models. Using the example of finding one’s way around Hampton Court Maze, he suggests that when a person in the maze used their internal map to ‘see’ what was around the next corner, they were using a mental model of the environment. Propositional representations, on the other hand, involved using language in order to access the rules about how to exit the maze, such as ‘keep taking the next right turn.’

Johnson-Laird’s view is similar to that of Miller (1977), who distinguished between practical and lexical knowledge. Johnson-Laird further distinguishes between mental models, propositional representations and images, which the mind uses, as it were, to
represent classes of phenomena. He suggests that one can have an image of an *individual* triangle, but not of the *class* triangle. Sometimes however a specific image of a triangle might actually stand for the class it represents. He proposes that mental models are built up by discourse, recognising that language plays a vital role in their formation.

Johnson-Laird was also interested in the logical processes that people use to solve problems and make sense of information. He recognised that mental models were complex. They had the power to enable people to draw inferences, verify statements, use syllogisms, make true-false decisions, manipulate data, perceive images from different viewpoints, transform images, rotate them, and (almost as an afterthought) 'see' the possible results of actions. He suggests that mental models are analogues of the world of experience, which can be modified and updated. Thus, in this view, all our knowledge of the world depends on our ability to construct models of it. However, we may have no ways of knowing what the structure of the world is that is independent of the way in which we conceive of it. Gregory Bateson (1972) described this as the difference between *map* and *territory*. *Are our* constructs pure phantasmagoria? This was an ontological and epistemological conundrum, which fascinated Gregory Bateson, (Bateson 1972, Bateson and Bateson 1988).

Most significantly to my own work, Johnson-Laird goes to some lengths to explore the relationships between language and mental models, proposing that language is used to create models by proxy, and that it does not matter as far as psychological processes are concerned, whether those processes are real or imaginary. Language itself is understood through mental models. Much of what Bandler and Grinder (1975, 1975A, 1976, 1979), Bandler (1985), Bandler and MacDonald (1988) explored and proposed, that what they found from working in the field of personal change and psychotherapy, often bore resemblances to developments in cognitive psychology such as those
of Norman, (Rumelhart and Norman 1985) Johnson-Laird, (1983) and De Beaugrande (1985), who wrote that:

> It would seem reasonable to envision the mental representations as multi-directional networks constructed and annotated to serve all the levels of processing, including words and phrases. (De Beaugrande 1985:168).

One of the main differences between NLP and other more mainstream schools of psychology is the role assigned to the senses in the formation of cognitive maps. (I explain this in the next section.) There is little in cognitive psychology on the role of the sense in the formation of mental models. There are some exceptions. Kosslyn (1985) for instance, proposed that much long term memory is based on imagery, and that people can perform a variety of actions on their internal images, such as rotating them, scanning, zooming in or out or transforming them. He further suggested that people can “voluntarily form images of objects at different sizes and locations” (Kosslyn 1985:71). He does not specify the extent to which such ‘images’ are constructed by means of the senses, or whether this had ever been empirically investigated.

Others have lately paid lip service to the idea that the senses may be part of internal modelling. Golledge et al (2000) recognised that:

> “Most people, when building a knowledge structure or representation of places and environment, do not use instruments or mapped representations, but rely on the basic sense of vision, acoustics, touch and sensory, motor or proprioceptive experience to identify, encode and store environmental knowledge.” (Golledge et al 2000:94).

Previously, Gibbs and Colston (1995), working within the tradition of cognitive linguistics had recognised that what they term mental image schemas are at once visual, auditory kinaesthetic and tactile, and
include the sense of balance. However they do not offer any ways of attempting to discover more about these. It is one of the most fundamental tenets of NLP, both in theory and practice, that we re-create experience internally through our senses, through creating *internal representations*. Thus when we make internal representations we use our vision, hearing, kinaesthetic information, taste, smell and movement *internally*. These may all be integral to our mysterious mapping processes, to how we *make sense*. I explain this in greater detail below.

### 3.2.4 Behaviourism and information processing; two different approaches.

Classical Behaviourists such as B.F. Skinner (1974) believed that we were essentially stimulus-response machines, so that learning and behaviour were nothing but responses to particular stimuli. Learning became equated with re-inforcement. On the other hand, the emergence of the information processing approach, reviewed by Klahr (1987) was closely linked to the growth in interest in artificial intelligence and robotics. Before that, Wiener had meticulously explored the differences between classical behaviourism and the implications to man and machine of the new paradigm of cybernetics and information processing, (Wiener 1961). Answers to the question ‘how do humans process information and then act on it?’ became central to developing computer software that carried out the same processes. It came to be recognised that humans (and perhaps animals as well) may well have to *construct* some kind of internal representation or conceptual map. Then the focus of inquiry changed to exploring the characteristics and roles of the internal processes that were necessary to receive, store, recover and process information. They needed to make models of how people made models of their experiences. This changed the focus of psychological inquiry. Perrig (1999) has made a similar point.
Through the dominance of the behaviourist tradition in the first part of this century, the focus was mainly on the action part, on performance. Cognitive psychology changed this focus and psychological studies started to contain lengthy elaborations on mental architecture and processes. (Perrig 1999:103).

With the growth of interest in artificial intelligence, it came to be realised that without more insights into such 'mental' processes, the investigation of any human behaviour was missing a whole dimension. Turing (in Miller, Galanter and Pribram 1960) wrote that "a machine cannot be expected to simulate something that has never been described – it can be held responsible only for those aspects of behaviour that an observer has recorded". (Miller, Galanter and Pribram 1960:46). The field is still at the stage of exploration; many authors have observed that we continue to lack an overall theoretical paradigm to account for human information processing and mapping. Van Dijk (1997) observed that "despite the rather extensive work on mental models, an explicit theoretical account of their internal structures has so far not been provided". (Van Dijk 1997:191). I hope that this work contributes something to this area.

3.2.5. Cybernetics

I introduce and explain some cybernetic theories, as I believe they may be a useful approach to our understanding of our cognitive processes. They also form one of the conceptual frameworks within which I carried out this study. The cybernetic theories of Gregory Bateson (1972) are relevant because they influenced the development of NLP.

Both cognitive psychology, and the developers of cybernetic thinking sought greater insights into what they called mental processes. Bandler and Grinder, the founders of NLP, admit their debt to many of the first cyberneticians, such as Miller. In 1960, Miller, Galanter and Pribram (1960) wrote:
'A human being – and probably other animals as well – builds up internal representations, a model of the universe, a schema, a simulacrum, a cognitive map, an Image' (Miller et al 1960:7).

Miller and his co-workers argued that such internal representations (or plans) were necessary in order for any activity to be carried out successfully. They claimed that without an organism’s ability to re-construct an internal representation or map, either of experience or of a future outcome, there could be no meaningful behaviour. Learning thus became dependent on building up effective mental maps; simulacra of the 'real' world. They proposed that there could be no survival if an organism did not have the ability to somehow create such internal models. In order to operate successfully on the environment, the organism, in addition, needed some kind of imaginal thinking ability. This is part of what they termed the 'plan' which they believed was essential to connect knowledge, evaluation and action. An organism was thus continuously interacting with its environment, and updating its 'maps'.

'Imaginal thinking is neither more nor less than constructing an image or model of the environment, running the model faster than the environment, and predicting that the event will behave as the model does.' (Miller et al 1960: 173)

This raises questions about the possible functions of such plans. Some cyberneticians suggest that in order for any activity to be able to be carried out successfully in the present, information about its desired outcome in the future must also be available to it from somewhere within the system. This introduction of the dimension of time into our understanding of information processing is one of the key differences between cybernetics and most other approaches and distinguishes the cybernetic approach from most other constructivist traditions.
3.2.6. The Cybernetics of control and goal achievement; the TOTE.

Norman (1977) urged his contemporaries in cognitive psychology to include cybernetic explanations, proposing that there must be a regulatory apparatus, which ‘runs’ the system. Perrig (1999) has stressed the importance of developing our insights into what controls cognitive processes. Such controls may well be beyond conscious awareness, and even be one of the bases of intuitive knowledge.

Gregory Bateson was already exploring the concept of control in cybernetic theory and our understanding of complex systems in the 1950s and 1960s, (Bateson 1960). The idea that all complex systems needed a regulatory mechanism in order to function effectively and survive remains one of the most important tenets of cybernetics. (Miller, Galanter and Pribram 1960, Wiener 1961, Ashby 1965, Bateson 1972). Miller and his co-workers, exploring the implications of creating artificial intelligence, (Miller et al 1960) suggested that behaviour is organised at many levels of complexity, and is controlled and guided by plans existing as information already within the system. Such plans may be conscious or unconscious. These plans were essentially information about a future goal or outcome. They proposed that the fundamental unit of information processing which operated at the heart of all systems was the TOTE, an acronym for test-operate-test-exit. They distinguish this from the classical concept of the reflex arc, believing that the TOTE was the main process controlling all animate activities.

The TOTE became important to the development of my thinking about how we might construct our mental models. For this reason, I give a short account of this process. In cybernetics, there must be some information, or plans about future activities within the system. Plans are internal representations of what the system wants or needs to achieve. As long as people are alive and behaving, their plans are being executed. In order for the system to ‘know’ whether a plan is
being achieved or not, it needs to compare its present state (i.e. information about what is happening in the ‘now’) with the desired planned outcome, (information about what should happen in the future). If there is a difference between the two, then the system is primed to respond to information in the form of negative feedback. This is what Bateson referred to as ‘news of difference’, (Bateson 1972). Negative feedback informs the system that something needs to change in order for the system to achieve the goal, i.e. that there is a difference between the present state and the desired outcome. If further operations are then carried out, and the state of the system becomes the same as the planned outcome, then the system ‘tests’ the differences between present state and desired state. If the activity is ‘on track’, then the feedback is positive, which is information that no changes in the activity are needed in order to achieve the goal. If the two (present state and desired state) become the same, then the system exits the goal directed activity, and ceases to strive to achieve the goal. The acronym TOTE is derived from this model. Hence test-operate-test-exit.

The first ‘test’ evaluates the difference between what is to be achieved, and what has been. Thus the TOTE process relies almost entirely on our abilities to compare, and to perceive similarities and differences. Bateson (1972) believed these to be fundamental epistemological processes. The ‘operate’ part of the TOTE is the system engaging in an action that furthers its path to achieving the goal. The third ‘test’ then evaluates what has now been achieved, and if the result matches the desired plan or outcome, then the action is exited (‘exit’), or abandoned, having been completed.

This TOTE process is considered to be central to information processing, whether conscious or unconscious. This model is held to be as valid to explain how the nervous system controls the contraction of a muscle fibre, as it is to illuminate more complex activities such as learning, or finding food. Miller and his co-workers
(1960) suggest that the TOTE is an organising and co-ordinating unit, which processes information occurring at many levels of complexity. They also explored the questions about the relationships between energy and information. They suggested a hierarchical model in which energy represented the lowest level of abstraction, information the second level, and control the third. Cybernetics assumes that intentionality is an aspect of all systems.

More recently, Freeman (1999) echoes Miller's ideas about intentionality. He claims that neurophysiologists suggest that there are integrated neural frameworks which are needed for intentional action, because even the simplest action, such as finding food, needs a mechanism to co-ordinate the individual creature's position in the world in relation to that of its prey. It then has to be able to evaluate its progress during its planning of an attack, or escaping from danger. Freeman also suggests that the brain is able to co-ordinate visual, auditory, somothetic and olfactory information into 'gestalts', which then influence selective attention, expectancy and prediction of future events. This hints at a neurological basis for the TOTE process.

Bateson was intrigued by the implications of the TOTE to human information processing. He supported Mittelstaedt's distinctions between the processes of calibration and feedback, (in Bateson and Bateson 1988:42). Calibration is the process of referring to an aggregate of information, which is constellated into a plan. The marksman who sets his sights on a moving target is computing a large amount of information, including how it will be when the shot hits the target. This is calibration, which is a different activity from feedback. Feedback is the information about the extent to which the calibrated outcome is being met, or not. In the TOTE process, if the first 'test' elicits the information that the goal has not been achieved,

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1 Thus, for instance, every muscle fibre responds to information generated by a TOTE carried out in the cerebellum, or the whole of a human organism can decide what he or she is going to have for lunch. These reflect two different levels of complexity, yet are operated by the same process.
then it is responding to negative feedback. If the 'test' finds that the plan has been achieved, then this is defined as positive feedback.

For Bateson, such activities were of necessity hierarchical. He uses the example of a thermostat controlling the central heating of a house. This is essentially a feedback mechanism, the thermostat being receptive to information about the temperature. It acts in the same way as the governor of a steam engine. If the ambient temperature is lower than that at which the thermostat is set, then this is negative feedback, indicating that more heat (i.e. a change) is needed. In other words, there are still differences between the present state and the desired state. When the temperature reaches the set degree, then the thermostat sends information to the boiler to switch itself off. However, there is a 'higher' level of complexity to this hierarchy. The person setting the thermostat, her needs, values and beliefs, have a controlling role in the heating of the house. She will TOTE as she sets the thermostat to her own outcomes. So this operation is at another level of control. These levels in turn may be controlled by yet 'higher' factors, such as the ecological implications of burning fossil fuels, and so on.

Thus one of the main implications of cybernetic theory is that a system's goals must play a central role in its continuing functioning. This intentionality is an idea not dissimilar to Aristotle's final cause. Using this approach, we could not gain a full understanding of a phenomenon without considering how its intentionality operates. The cybernetic model proposes that the feedback, calibration and the TOTE may be the most fundamental of all information processing mechanisms, operating at all levels of complexity in organisms, from the sub-cellular to the societal.

Crombie (1961) has pointed out that Aristotle distinguished between animate and inanimate things. Living things, in Aristotle's view, were able to initiate movement and change without an external mover. Both Aristotle and Galen made valuable discoveries about the organs of animals by seeking to understand their purpose or function. The main difference between the Aristotelian view, and cybernetics, is that for the Greeks purpose was perceived as something metaphysical.
In cybernetics, intentionality is part of the physical information processing apparatus of any self-maintaining system.

There is a growing awareness in the literature of the importance of goals to the healthy functioning of individuals. Bandura (1997) has explored the importance of a person’s goals, and how they relate to people’s experience of their own self-efficacy. Tory-Higgins et al (1997) suggest that there are two kinds of goals. One has what they term a ‘promotion focus’ which relates to a desirable outcome, and the other is called a ‘prevention focus’, which is where the individual’s goal is to avoid something unpleasant. They claim that there is a relationship between individuals’ goal attainment, and them feeling good or bad. Foerster et al (1999) propose that motivation increases as one moves towards a goal. Motivation is also stronger when it is powered by a ‘promotion focus’ than by its opposite. Lebiere and Lee (2001) apparently (and if their bibliography is anything to go by, without being aware of Miller’s views) re-discover the idea of the TOTE, but use a different terminology. They propose that uncompleted or only partially completed intentions are available as a context to the current goal. Once tasks are completed, they are removed from the current goal. This then produces an inhibitory effect on further activities. This is another way of describing the TOTE.

If there is any substance to Lebiere and Lee’s views, then the goal must be of a different logical type to the actions leading to it. In cybernetic terms we would use the concept of positive and negative feedback as necessary information guiding intentional actions. As the internal representation of a goal is a complex aggregate of information, it must then be of a higher (more complex) logical level than the simpler actions used to achieve it. Such higher logical levels, operating on the system as goals, may then also act in a similar way to conceptual categories. Intriguingly, they then go on to suggest that there is an Intention Superiority Effect (ISE). They claim to show by means of empirical data and computational modelling, that intentions are the greatest determinants when people are successful in carrying
out tasks such as memorising. Schaub (2001) believes that all behaviour is driven by intentions, describing them as a data structure comprising, besides the respective needs, one or more goals, which appear to be suitable to satisfy the current goal. He uses this as a basis for distinguishing different personality types, based on their individual approach to a goal.

It is as if we had come full circle back to the cybernetic viewpoint, and Bateson’s thinking, which was so important to the development of Bandler and Grinder’s work. Bateson stated that with the growth in cybernetic theory,

“the whole problem of purpose and adaptation – the teleological problem in the widest sense – had to be reconsidered ... what happened at the Macy meetings was an exploration of the enormous scope of these ideas in the explanation of biological and social phenomena”. (Bateson, in Donaldson 1991:53 – 54).

3. 3. 1. NLP, models and modelling.

NLP is both about the exploration of the nature of our subjective experience, and the role that language plays in thinking, (Bandler and Grinder 1975). Exploring the ways in which we make sense involves modelling, attempting to create an understanding or model of another person’s internal world. The word modelling seems to have emerged directly as the result of the need to generate computer models that simulated human thought processes. With the emergence of cognitive psychology there came the recognition that inquiring into what went on in people’s subjective experience was perhaps more important than experimenting with rats in mazes.

Eysenk (1993) suggests that with the growth of interest in information processing there occurred a significant shift of attention to ‘mental’ processes in a number of fields. Clement (2000) has posed some questions that this shift generated for contemporary research
into teaching and learning. Some of these were: what are the roles of mental models in learning? What is the nature of these models as knowledge structures? What learning processes are involved in constructing them? What teaching strategies can promote these learning processes? (Clement 2000).

Lakoff (1987), believed that we use mental models in order to attempt to understand the world. In particular we depend on them for our theorising about the world, and they allow us to make sense of mental phenomena. This is of interest to educationalists, particularly those favouring a constructivist approach, because learning is thought to involve the formation of cognitive maps. I draw from a number of psychological approaches, especially from those that intersect with my own approach. I believe that the topic is of importance to anyone interested in the processes involved in learning, and how these may be mediated by teaching.

In 1976 Bandler and Grinder, the founders of NLP, explained their own approach to the idea that in order for us to know, and to be able to act on the world, we humans had to be able to re-create an internal representation of 'reality', through using all the senses internally. They used the term 'internal representation' specifically to refer to this aspect of knowing and making sense. I review their ideas in more depth later on in this chapter. They cite Vaihinger’s work published in 19243 (Bandler and Grinder 1976) as one of the sources which inspired them to further explorations. Gregory Bateson (1972) was perhaps one of their most influential mentors, as their neighbour, friend and prolific speculator and writer. He spent a great part of his life exploring how we humans, made sense of the myriads of bits of information that impinge on our sense organs throughout our lives, believing that only a new approach to our own mental processes would result in a greater understanding of understanding. In this he was influenced by Alfred Korzybski(1958), who was one of the first to

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explore the idea that mental processes might influence how we thought, understood and used language.

For both Korzybski and Bateson, the existence of such maps had a profound epistemological significance. They proposed that it was only through developing an understanding of the mapping processes themselves that we could arrive at any insights into how we knew. As early as 1941 Korzybski had distinguished between the mental processes we need to make sense of experience, and experience itself, urging that it was an epistemological necessity to understand that such internal maps were in no way to be confused with the ‘external territory’. In this he echoed Bertrand Russell, who according to Ernst Nagel (1960), had re-interpreted physics by proposing that what is experienced is distinct from the logical constructions subsequently put upon it by the observer.

In the 1970s some schools of psychotherapy, such as the Mental Research Institute in Palo Alto, California, and the approaches taken by practitioners of Brief Therapy, were quick to use developments in our understanding of internal processes. These included therapists deliberately inquiring into how people constructed their problematic experiences. What did patients see, hear, feel, taste, smell as they recollected? These traditions placed considerable emphasis on trying to understand the structure of the pathologies in people’s cognitive maps, (Watzlawick 1967, Bateson 1972). Bandler and Grinder (1975, 1976, 1979), Bandler (1982), were influenced by these approaches.

Bandler and Grinder (1975) and Bandler and MacDonald (1988) then developed an approach to therapy and change which depended wholly on understanding and working with people’s subjectively experienced internal representations, beliefs and values, stressing the quintessential need for language to generate changes within these internal processes. They also recognised the extent to which individuals could be damaged through the pathological communication patterns from significant others.
3.3.2. Bandler, Grinder and MacDonald’s ideas on internal representations and sub-modalities; how the senses may be involved in information processing.

In this section I consider the approach to internal representations that has become part of current NLP theory and practice. It also represents a departure from many other ideas about mental models, which currently predominate in the literature. It has become part of received wisdom that we possess a complex interactive processing mechanism, simulating, yet adapting and responding to incoming information, forming a kind of dynamic map, a simulacrum of experience which is then responsible for generating our responses. Bandler and Grinder (Grinder and Bandler 1976, Bandler and MacDonald 1988) claim to have discovered a significantly different aspect of people’s internal cognitive models, which seems to have escaped the notice of mainstream cognitive psychologists.

This difference is that people create what are specifically termed internal representations, which could be described as a part of people’s mental models. However, in internal representations, all the senses are involved in creating or re-creating experience for the conceiver. So people can see, hear, feel, taste, smell, be aware of movement, experience changes in temperature, and the other physiological concomitants of associated emotions as they think about an experience. It does not matter whether the experience that is ‘re-presented’ is a memory, a reflection, a future goal, or a daydream. Thinking always involves using the senses internally, as it were, to code experience.

My information gathering focused on exploring these areas. Information about this aspect is almost completely missing from other approaches to modelling how we know, and how we process information. It is also absent from most mainstream educational
theories. It was of particular interest to me, as it is one of the areas which I explored in my data collecting, and which I describe further in Chapters 6 – 10.

There are some references to internal representations in the therapeutic literature. Knox (2000), for instance, investigated people’s internal representations of their therapists. She found that not only did they use visual, auditory and kinaesthetic modalities when they were introspecting about the therapists, some also used these images to gain comfort and reassurance when away from the therapist.

When one is working at the level of internal representations and sub-modalities, questions about ‘how do we know’ inevitably occur. Traditional psychology, cast in the Cartesian dualistic mode (Damasio 1994, 2000), usually ignores the role of the body and the emotions in cognition. This is nowhere more typified than in some of the recent publications in cognitive linguistics. Grady (2000) reviews his ideas on what some of the basic cognitive processes might be, but ignores the role of physiological processes or feelings. Gibbs (2001) explores blending theory in relation to cognition. Blending theory suggests that meaning is produced through the “blending” of different mental “spaces” (Fauconnier 1994, 1997, Fauconnier and Turner 2000, 2002). Gibbs proposes that blending theory offers some provocative ideas about how people represent information and map different domains of knowledge to create what he terms ‘blended spaces’. (Gibbs 2000:352). He also cites seven characteristics of cognitive models, originally published by Markham in 1999 as a guide to further research. In none of these is there any mention of body, feelings, emotions, goal setting, or motivation4, let alone any role for the senses.

4 Markham’s Proposals, cited by Gibbs (2001) as defining cognitive models.

1. Cognitive models must be based on representations that actually represent.
2. Cognitive models must adopt multiple approaches to representation
3. Cognitive models must use representations at multiple grain size.
In Bandler and MacDonald’s (1988) view, if all the senses are used to create an internal representation, then feelings or bodily sensations must also be involved. Internal representations are thus not only neuro-physiological phenomena, they may also be linked to physiological processes. Damasio (2000) expresses such a view from his standpoint as a neuro-physiologist, “.... Even when we merely think about an object, we tend to reconstruct memories not just of a shape or color but also of the perceptual engagement the object required and of the accompanying emotional reaction, regardless of how slight”, (Damasio 2000:148). Kerzel et al (2001), writing from a similar position, suggest that the most recent neurological research in this area points to cognitive maps both influencing perception and simultaneously activating patterns of motor responses. Perception and action, in their view, are fed by a common, cognitively penetrable, representation.

The importance given to the domain of the senses as essential parts of the structures of internal representations appears to be unique to NLP. In Bandler’s view, a phobia is a memory or image of something that is linked to an overwhelming bodily feeling, which produces a strong fight-fright-flight response whenever it is accessed. In cybernetic theory, body and mind are not separate entities, (the split is purely a linguistic one); they are parts of the same cybernetic system. They are not distinguishable, except conceptually. Bateson described the Cartesian split as “the battleground of science, especially of biology (...) and the problem is how to get away from it”, (Bateson, in Donaldson 1991:176). In his cybernetic epistemology there is another split of a fundamentally epistemological nature; the split between the map that we have conceptualised, and the terrain of

4. Cognitive models must be clear about the specification of process.
5. Cognitive models must attend to the details of processing as well as its gross form.
6. Cognitive models must attend to social context.
7. Cognitive models must attend to the relationship between the individual and the world.
experience. This, in his view, may forever remain an ontological conundrum to us. Bateson recounted at a lecture given at Lindisfarne in 1975: “I keep coming back to the assertion that what we deal with are descriptions, second order representations of how it is. How it primarily is we don’t know, we can’t get there”, (Bateson, in Donaldson 1991:182). This is reminiscent of Zeno’s paradox, for it has a similar structure. Is the only thing that we know, perhaps, that we cannot know?

3.3.3 Sub-modalities

One of the main areas I inquired into in my own data gathering was the changes that occurred in people’s internal representations as I asked them to respond to certain of my words or phrases. I was often asking people to report on their experiences of what Bandler and Grinder termed sub-modalities. Bandler and Grinder (1976) stressed that our senses are critical to the coding of information and the construction of our internal models. They propose that there is great significance in the small distinctions within each sensory modality. These distinctions are called sub-modalities.

Sub-modality distinctions are revealed by asking people about their internal representations of events. For instance, are the internal images in colour or black and white? Moving or still? What sort of sounds are associated with an internal representation? Are they accompanied by an internal dialogue? Are the sounds loud or soft, near or far? What bodily or kinaesthetic responses contribute to a particular internal representation? (Bandler and MacDonald 1988).

When using NLP to work with people, we explore what and how people have re-represented internally, before making any kind of intervention. In order to do this we need to know how to make people conscious of their own processes at this level, as well as how to question people about their experience of these processes.
Bandler and Grinder were some of the first people to focus deliberately on this aspect of people’s internally coded information in their therapeutic work. They also paid attention to what was happening at this level when they were modelling people’s conceptual processes. This meant they had to develop an approach to questioning which would elicit the information stored at those levels. An example taken from one of Richard Bandler’s seminars illustrates this approach, (Andreas 1999). In the following extract Bandler is asking people to compare their own internal representations of two different memories, then to explore how changing some of the variables could result in a subjective change of meaning for them. He does this so that people easily become aware of their own domains of internal representation, and learn about sub-modality distinctions at the same time.⁵

“There is another fascinating phrase that has always stuck in my mind. When you’re going through something unpleasant, people will often say, “Later, when you look back on this, you’ll be able to laugh”. How many people in here have a memory of an event that was unpleasant to them at the time, but now you can look back on it and laugh? There must be something you do in your mind in the meantime that makes an unpleasant experience funny later. I want you to compare those two memories to find out how they’re different in terms of visual sub-modalities – the smaller process elements that make up a visual mental experience. Do you see yourself in one and not the other? Is one a slide and one a movie? Is there a difference in color, size, brightness or location? Find out what’s different and then try changing the process variables of that unpleasant picture to make it like the one that you can already laugh at. If the one you can laugh at is far away, make that one far away too. If you see yourself in the one you laugh at, see yourself in the experience

⁵ This forms an important aspect of training in NLP.
that is still unpleasant. Go ahead." (Bandler, quoted in Andreas 1999:23-24).

This passage illustrates how Bandler teaches people about their own internal representations. I am continually surprised when I train in NLP, how easily people can access their own internal representations of events, whether past, present, or future, and then go on to explore the sub-modality distinctions between them without apparent difficulty. In my own personal experience the very rare exceptions have been when individuals have apparently suffered some profound trauma. Then it may become difficult for them to access certain internal representations. These may, quite appropriately, be suppressed as part of a coping mechanism. (Perren-Klinger 1998, Mathison 1999). There is also some interest in using NLP to enhance teaching, (Hager 1989, 1990, 1992, Lee, 1993 Sandhu, 1994, Stanton, 1994,).

There has also been interest in the use of NLP in coaching and personal development work, (Thompson et al 2002). Many types of interventions can be made at the levels of people’s internal representations and sub-modalities. This approach has also been used to coach top athletes. Steve Collins (1995) for instance, used an NLP trained personal coach, before his fight with Chris Eubank. A short extract from Collins’ autobiography illustrates how coaches can work with people at the level of internal representations and sub-modalities. The coach asks Collins to shrink the internal image he has generated of his opponent before the fight. This is essentially asking him to change a sub-modality, an aspect of the internal visual image. In the following extract the coach has enabled Collins to access his internal representations about the coming fight, then change the sub-modalities so that his feelings about the approaching fight changed. Collins wrote that:

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6 This person had been one of my students in NLP.
“Sports psychologists have discovered that when a boxer, a
tennis player or an athlete who competes as an individual is
frightened or intimidate by an opponent, he’ll actually see that
person as being physically bigger than he really is. Again, he (the
coach) asked me to picture Eubank, standing opposite me in a
ring. ‘Reduce him in size,’ he said. ‘He’s getting smaller ... smaller
... smaller. And I did, until I towered over him by at least a foot”.

Our senses may have two vital functions; one is to receive
information from the environment, the other is to re-create
experience internally. The existence of such internal structures is
taken for granted by anyone who has participated in workshops or
seminars on NLP. When working to effect changes in people, internal
representations and their sub-modalities are often one of the main
’sites’ at which to target interventions. Bandler claims to be able to
cure phobias by working with people almost entirely at the sub-
modality level of their conception of the phobic event, (Andreas
1999).

Some of the areas in which an understanding of internal
representations and sub-modalities has been shown to be of use
includes the investigation and treatment of post-traumatic stress
disorders, (Perren-Klinger 1992, 1998, Walsh 1992). It has also been
applied to personal coaching (Faulkner 1999) enhancing sportsmen
and women’s performance (Wanless 1987, Collins and Howard 1995)
and to improving students’ abilities to memorise and understand,
(Mathison 1999).

Despite its track record in business, management, and sports
coaching, NLP remains outside mainstream psychological and
phenomenological inquiry. Most of the published accounts of working
with NLP in a variety of contexts are anecdotal. Sometimes people
become suspicious of the approach, perceiving it as ‘manipulative’.
There have been some publications on NLP. They range from the

NLP makes many claims about how to go about modelling people's subjective experiences. What is lacking, however, from the founders of NLP, and many of their students, is any rigorous experimental inquiry into the nature of these internal representations. Internal representations and their sub-modality distinctions are simply and uncritically accepted as one of many aspects of everyone's ability to code and process information. Indeed Bandler and Grinder (1975) claim that the classical scientific approach would be entirely inappropriate to this field, as one of their most fundamental beliefs is that every individual is unique in the way in which he or she reconstructs and responds to information. However, I believe one can demonstrate the existence of internal representations and sub-modalities, however subjective and fleeting these phenomena may appear, through introspection.

If there is any substance to the notion of the existence of the domain of internal representations, then this opens up new directions for investigation. There are new questions that can be posed. These include: what do our senses do in the construction of internal representations? What effects does language have on these internal processes in particular?

There also remain some thorny methodological questions, such as 'what ways are the most appropriate to such an inquiry?' The proposal is that human beings re-represent information internally in the form of complex simulacra of sensory data, which can be influenced by language. What remains central to this inquiry is the belief that people's internal representations are accessible, and can be approached as a domain of consciousness, which can be interrogated. They may appear as phantasmagoria to the more empirically minded, and are as evanescent as any phantasm, yet working with them
phenomenologically is almost like entering another domain of consciousness.  

3.4.1 Abstraction, categorisation, classification, logical levels; thinking about thinking about sense-making.

The processes of abstraction and categorisation are relevant to this inquiry because they involve both cognition and language. In this section I review some ideas about how abstraction and categorisation may influence our thinking. I include in the next chapter information about some of the ways in which language too can categorise. I have gone into this area in some detail, as my own findings were that these levels played an important role in people’s approach to learning, and to being ‘taught’.

Korzybski’s work *Science and Sanity* (Korzybski 1958), originally published in 1933, was one of the first to explore the implications of the processes of abstraction to both mathematics and linguistics, as well as to how we know that we know. It was also one of the works that influenced the development of many of Bandler and Grinder’s ideas. Korzybsky proposed that abstraction was fundamental to human thinking processes, and not without its dangers. The process of abstraction essentially involves the aggregation of information into classes or categories. Korzybsky was influenced by Bertrand Russell’s (1921) insistence that our views of logic had to be entirely revised as the result of his (Russell’s) theory of logical types. In a nutshell, it proposes that there was a significant epistemological distinction to be made between an individual event, and the group or category to which it was assigned. The individual could never be the group because they were two different logical types.

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7 I describe this aspect of my explorations in Chapters 6 –9.
In 1910 Russell (Russell 1960) had urged the necessity of distinguishing between what was experienced through the senses, and the constructions and definitions placed upon this through theorising. Here we have the germ of the important distinction between logical levels; sense data are of a different logical type, and at a different level, than the abstractions to which they are linked to in the conceiver. We could say that internal representations are a different logical type to the class or category to which the represented experience is assigned. Both are essential to making sense. It could also be said that language could be thought of as yet another logical type.

The epistemological pitfalls for human reasoning encountered through the processes of abstraction remained a lasting fascination for Gregory Bateson. He frequently wrote about the importance of being able to distinguish between different logical levels, in order to understand human (and even animal) behaviour. Among his most enduring contributions was his analysis of the aetiology of schizophrenic thinking (Bateson 1972) which could only be understood on the basis of a sufferer’s inability to assign messages to their ‘correct’ logical category.

His best-known example is illustrated by the two statements ‘fruit-flies like a banana’ and ‘time flies like an arrow’. These can only be understood if they are assigned to their ‘correct’ class of communication. The first statement belongs to the category ‘literal statement’ the second one is metaphorical. Bateson’s view was that in ‘schizophrenogenic’ families, victims were unable to assign the second statement to the ‘correct’ category of metaphor. They may even have been prevented from doing so through confusing communications from significant others. There are no such insects as time flies, nor do they feed on arrows. To be able to assign incoming information to its correct category is, in this view, critical to any act of making sense. To be prevented from doing so, can lead to psychopathologies of thinking.
The processes of abstraction have also been of considerable interest to linguists, philosophers, logicians, educationalists and psychologists. George Lakoff (1987) in his seminal work *Women, Fire and Dangerous Things* explores the processes of categorisation and their philosophical implications, arguing for an essentially subjectivist view of knowledge. He suggested that how information was categorised, influenced how it was then perceived. In his view, to change the very concept of a category was to change not only our concept of the mind, but also people’s understanding of the world. Categorisation was, in his view, so fundamental an epistemological process that people tended to attribute a real existence to the categories themselves. For Lakoff, categorisation was an equally fundamental aspect of the architecture of all conceptual models. “There is nothing more basic than categorisation to our thought, perception, action and speech”, (Lakoff 1987:5). Lakoff also rejects the legacy of Cartesian dualism, stressing that in his view, concepts were embodied. Lakoff and Johnson (1999) wrote: “... our categories arise from the fact that we are neural beings, from the nature of our bodily capacities, from our experience interacting with the world, and from our evolved capacity of basic level organisation” (Lakoff and Johnson 1999:30). Knott, Sanders and Oberlander (2001) agree with Lakoff and Johnson that “human beings categorise the world around them, usually unconsciously”, (Knott et al 2001:198).

It has now become part of received wisdom to suppose that our central nervous systems have a way of ordering information into classes and categories. Rosch, (1977), whose work influenced Lakoff, sums this up in a passage reminiscent of Bateson’s own approach:

One of the most basic functions of all organisms is the cutting up of the environment into classification by which non-identical stimuli can be treated as equivalent [...]. the objects of the world are determinately structured because levels of abstraction in
class-inclusion hierarchies are themselves not structured but highly random. (Rosch 1977: 212 - 213).

Nelson (1977) believed that categorisation was a primary cognitive function. In her view, categorisation involved the grouping of events into aggregates based on perceived similarity. This presupposes that the ability to perceive similarities is a necessary perceptual process. The ability to categorise and classify is thought to be of great importance to how individuals act on the environment. The evolutionary biologist MacPhail (1998) argues that this is one of the most basic of survival mechanisms. The social psychologists Sia, Lord, Blesssum, Ratcliffe and Lepper (1997) believe that there is a relationship between how something is categorised, and a person’s consequent attitude and behaviour towards it. Wittenbrink, Gist and Hilton (1997), and Hahn and Chater (1997) propose that judgements and actions are based not on individual instances, but on the category to which the conceiver has assigned an event. Then categories are thought to act as a kind of blueprint, which contains within it templates informing subsequent behaviour and cause effect relations. Minsky (1977) suggests that we use such frames as a kind of data structure for representing new situations.

Weick (2001), approaching the subject of categorisation from the point of view of management psychology, emphasises the importance of categorisation to sense making, and the effects of changing the perception of a task through re-categorisation.

“If a person justifies a decision to accept an unpleasant assignment with the explanation that it will be a challenge and an opportunity, that person often can create just such attractions and solidify the justification by the way he or she performs the assignment”, (Weick 2001:23).

Cazden (1988) cites an example of the influence of a perceived context (which acts in the same way as a category or class to which
the perception of an action is assigned) on the responses of schoolchildren to a command.

"In two Soviet experiments, preschool children were able to stand still longer when asked to "be a guard" (contextualised instruction) than when asked simply to stand still", (Cazden 1988:116).

Price-Davies and Knowles (1999) have described the effects on people when their existing conceptual frames are disrupted, and replaced with others. Goldstone, (1998) who heads the Percepts and Concepts Laboratory at Indiana State University, has researched the perceptual and cognitive processes involved in, and influenced by, categorisation and abstraction. He proposes that assigning events or 'things' to particular groupings or categories influences what is then attended to, and what is not. There are, in his view and those of his co-workers, at least nine different perceptual effects that categorisation can potentially exert on the perceiver. I have listed them fully, as they indicate the potential powers of categories to influence perception. The words that are used can also assign events to categories in subtle ways. (This inter-relationship between language and categorisation will be re-visited in other chapters.)

Categorical Perception: Differences among items that fall into different categories are exaggerated, and differences among items that fall into the same category are minimised. (Goldstone 2001A)

Attention: One of the simplest ways in which thoughts distort perception is by highlighting or emphasising certain aspects that are momentarily important. (Goldstone 2001B)

Dimensionalization: We create perceptual dimensions (size, brightness, saturation, eccentricity) by witnessing variation along these dimensions. We tend to order objects by their value on
dimensions that we create or already possess. Objects are originally perceived holistically, without being decomposed into separate dimensions, come to be perceived analytically, in terms of their underlying dimensions, (Goldstone 2001C).

Unitization: If a group of shapes form a coherent, contiguous pattern and are often repeated together, a single chunk or unit will be formed by concatenating them together. Unitization creates a single unit from multiple parts that occur together. (Goldstone 2001D).

Segmentation: We naturally see objects as being composed out of parts. Instead of perceiving indivisible objects, we perceive objects in terms of their labelled or categorised parts. We break objects into parts that we have learned are relevant or important. (Goldstone 2001E).

Assimilation and contrast: We distort the dimension values of an object so that they become more like the values typically seen for the object’s category, or less like the values seen for contrasting categories. (Goldstone 2001F).

Differentiation: With expertise or practice, differences are noticed between objects that were once thought to be identical. (Goldstone 2001G).

Idealisation: Objects are often simplified so as to capture the basic essence of the underlying concept. (Goldstone 2001H).

Elaboration: the filling in of perceptual details according to what we know of the object. It is the opposite of idealisation in that it involves creating richer, rather than more impoverished representations. (Goldstone 2001I).
What may be significant about this list is that all these different factors may also be communicated through language. They give a hint that when we use language to categorise something, then it is likely that this could have an influence on perception and thought, and thus on behaviour. Gipps and MacGilchrist (2002) have, for instance, reviewed this in terms of teachers’ perceptions of their students’ abilities, and how this influenced their attitudes to them.

There has been some interest in what happens when people’s existing categories are changed. In some clinical studies of human interactions, applying the notion that thinking and making sense always involved categorisation of some kind has developed clinical research into pathological communication patterns. In the 1960s, Watzlawick and his co-workers (Watzlawick, Bavelas and Jackson 1967) had proposed that communication was multi-level; that all messages had to include meta-messages about the category to which the original message was to be assigned. Such meta-messages were communicated non-verbally. They explored how the multi-level nature of all communication could result in many misunderstandings and pathologies. Watzlawick was one of the original people at the Palo Alto Mental Research Institute, whose work was partly inspired by Gregory Bateson’s approach to human thinking and epistemology, (Weakland 1994). Watzlawick, Weakland and Fisch (1974) explained how their clinical approach to psychotherapy had as one of its essential bases Evariste Galois’ Theory of Groups, and Russell and Whitehead’s Theory of Logical Types. In 1977 Watzlawick and Weakland produced a seminal book, which showed the ways in which behavioural pathologies could be analysed in terms of destructive communication patterns. These always involved producing confusion between more than one level of meaning, or categorisation. What this means, if one applies this model, is that just as human information processing involves categorisation as an essential part of the construction of mental maps or constructs, so all acts of communication between
humans must contain information about the category to which the message is to be assigned.\textsuperscript{8}

Bandler and Grinder (1982) argue that changing the conceptual framework that people have constructed around a problematic event can alter the meaning that they have made of it. They also believe that this is the basis of all therapeutic change. O’Hanlon and Wilk (1987) wrote extensively about the psychotherapeutic effects of changing patients’ perceived contexts and frames, and the effects this had on their subsequent well being. This is another way of saying that re-categorisation affects how events are experienced and responded to.

The investigation of the processes of abstraction and categorisation have become of interest to researchers in both cognitive and educational psychology. It is as if these processes are now taken for granted. Underwood and James (1996) wrote that: “Historically the ground has shifted in the debate over the nature of the representation of knowledge from an argument over whether an abstraction occurs or not ... to a position where abstraction is a phenomenon accepted by many.” (Underwood and James 1996:25.)

Thus abstracting and categorising may be as necessary to the construction of mental mapping processes or mental models as are internal representations. According to this approach, we cannot form mental maps, or process information without having performed some sort of grouping or classification. Murphy and Lassaline (1997) suggest that a particularly important way of organising concepts is

\textsuperscript{8} One of my findings from the Master Practitioners’ interviews of students having attended an NLP course was that how they categorised themselves as learners had undergone significant changes. I describe these in Chapter 10.
through a hierarchical arrangement. This introduces the idea that organising information into different logical levels may also be an aspect of our cognitive ordering of information. These processes raise interesting epistemological conundrums, such as Epimenides’ paradox, and the Double Bind theory (Bateson 1972). Questions such as: ‘what are their functions in learning and how does language influence them?’ remain intriguing. De Beaugrande (1985) proposes that “it would seem reasonable to envision the mental representations as multi-directional frameworks, constructed and annotated to serve all the levels of processing, including words and phrases.” (De Beaugrande 1985:168) There also remains the possibility that how learners categorise their experiences of learning may influence their internal representations about learning. These are some aspects which were explored later in the data gathering and analysis stage of this inquiry.

3.4.2 Metaphors

Any consideration of the processes of abstraction and categorisation would be incomplete without some mention of the recognition that has been accorded to the idea that metaphors also play a fundamental role in how we know. Metaphors also bridge cognition and linguistics. The recognition of their importance was catalysed by the publication of Lakoff and Johnson’s work *Metaphors we Live By* in 1980. Since then there has been increasing interest in the cognitive influence of metaphors and their epistemological significance. Indurkhya (1992) echoes the views of Lakoff and Johnson, believing that metaphor but pervades all aspects of cognition is not just a phenomenon of language, and is indispensable to understanding. The cognitive aspects of metaphor cannot be separated from language. Christa Baldauf (1997) believes that metaphors fulfil a central function to human understanding, as they make abstract concepts

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9 Thus, the sentence “My dog Daisy is a black and white Border Collie” contains within it at least six levels of abstraction. 1)Dog, 2)Collie, 3)Border Collie, 4)Black and White Border Collies, 5)Other ones called Daisy, 6) Daisy.
accessible. She refers to them as “ein Uebersetzungsmedien”, which, loosely translated means a medium for translation. Thomas and Mareschal (2001) write that the metaphorical process is in some ways similar to that of classification. Both are equally basic epistemological processes. “Metaphorical meaning emerges as a result of deliberate misclassification” (Thomas and Mareschal 2001:12) so they function as a different kind of classification. (Mis-classification is still classification!) They go on to explain that “categorisation causes a transformation of the input vector to make it more consistent with the category. Metaphor occurs when the novel input is not a member of the category to which it is applied.” (Thomas and Mareschal 2001).

Bateson (1972) refers to the process whereby two mental events are linked to form a new meaning as abduction, suggesting that this too was a basic epistemological process.

Metaphors themselves only “work” if they are able to make links between what could be two different logical types, even if they initially appear to be mis-matched. The process of ‘metaphorisation’ may thus be essential to any act of making sense. We seem only to have begun to gain insights into how we know that we know, how we map experience, and the power of categories to shape information.

### 3.5.1 Unconscious processes.

The term unconscious is difficult to define with accuracy. I include a consideration of unconscious processes here because in my data gathering, I seemed to be working with material from people that seemed often, metaphorically, to come from the border between their conscious and unconscious processes. In the analysis of the text of some interviews, I conclude that it is likely that unconscious processes played a role in people’s approaches to learning.

There has recently been increasing recognition that many of our information processing activities may act below the level of our conscious awareness. Some of the processes, such as forming
internal representations, ordering information into categories and logical levels, apprehending meaning through metaphor, may all be beyond conscious awareness. They may also involve the conceivers’ emotions and other physiological factors such as their levels of physiological arousal. Thus there may be unconscious processes, which play an important role in learning and behaviour.

This has led to increasing interest in the activities of the psychological unconscious, how “mental structures, processes and states can influence experience, thought and action outside of phenomenal awareness and voluntary control.” (Dorfman, Shawer and Kihlstrom 1996:260). Knowlton (1997) refers to the apparently separate conscious and unconscious conceptual activities as declarative and non-declarative knowledge. Categorisation is certainly a process over which we seem to have little conscious control, yet it is critical to how we order information, and therefore to our epistemology.

The idea of the existence of unconscious mental processes has been mooted from classical times to the emergence of the psycho-analytic movement, Plato to Freud as it were, (Rey 2000). Perrig, Wippich and Perrig-Chiello (1993) suggest that the concept of unconscious processes has been slow to be taken up by mainstream cognitive psychologists because of the difficulty of investigating these empirically. Their position is that Psychology is a long way from having a clearly defined and workable model of consciousness itself, let alone of the unconscious. Historically, the unconscious has been mostly explored through introspection. They suggest that consciousness itself can never be fully modelled, as individual consciousness can only be experienced by an individual. The constructs, models, theories and generalisations that are derived from experimental data cannot be applied to an individual’s most private insights into their own unique inner worlds. “When we take our mental situations as personally relevant, private data, then we must abandon the notion that such data can be the basis of any generalised
theory", (p17, author's translation).\textsuperscript{10} They further suggest that a phenomenological approach to exploring human experience is as valid as a 'scientific' one.

This is not the place for a review of the history of the idea of the unconscious, or its many applications. This has been done extensively elsewhere, for instance in Underwood (1996) and Windmann (1997). This concept has formed a metaphorical backbone for most if not all of Psychoanalytic theory developed over the last Century. It has also been extensively explored in the literature on hypnosis, particularly within the Ericksonian tradition, (Bandler and Grinder 1975A, Grinder, DeLozier and Bandler 1977, Erickson 1980, Hall 1989). Underwood (1996) has reviewed the emergence of interest in unconscious processes, and Tolk and Reingold (1996) have explored the unconscious relationships between motivation, categorisation and retrieval. Perrig and Wippich (1995) have researched the idea of intuitive judgements as the product of an unconscious organisation or structuring of perception.

There is also the question of the role of the unconscious in memory, (Meier and Perrig 2000). Perrig (1999) claims to have demonstrated that people can discriminate between an array of shapes, picking out the one that does not fit, (in other words, belongs to a different category) without being aware of how they do it. Windmann (1997) has reviewed some work on unconscious recognition of sensory stimuli. There has also been intriguing work on the unconscious effects of metaphor (Bettelheim 1976, Gick and Holyoak 1977, Watzlawick 1978), which indicates that the structures embedded behind the language of story or metaphor are processed unconsciously, and then influence subsequent information processing.

\textsuperscript{10} Wenn wir mentale Zustände als persönenlich relevante, private "Daten" begreifen, müssen wir davon ausgehen dass solche "Daten" nicht die Grundlage einer allgemein akzeptablen Theorie sein können.
Gregory Bateson was intrigued by the unconscious effects of communication. He was one of the earliest people to suggest that one of the unconscious' most vital functions was that of assigning incoming information to categories. The notion of semantic priming is of more recent origin. Dorfman (Dorfman et al. 1996) cites Yaniv and Meyer's (1987) proposal that "subjects are sensitive to, or influenced by, knowledge structures that are activated below the level required for conscious awareness" (Dorfman et al. 1996 p 275). These knowledge structures may be embedded in linguistic forms. This is one of the core assumptions of the Ericksonian tradition of hypnotherapy.

An increased emphasis on the importance of unconscious processes in learning is emerging. Johnson-Laird (1983) in his exploration of mental modelling, suggested that we have no way of knowing how our mental constructs are produced. We cannot be aware of every step in deduction, or of the extent to which our mental models actually correspond to the physical world. Neither do we know how we retrieve, only what we retrieve. He ends by proposing that "all learning depends on unconscious processes" (Johnson-Laird 1983:467).

There is now a tendency to use the term implicit rather than unconscious in the literature. It is proposed that there are implicit and explicit memory and perception, (Dorfman et al. 1996). It is also argued that intuition and incubation are unconscious processes, being aspects of implicit thought and cognition.

Explicit memory refers to conscious recall or recognition of events, while implicit memory refers to any effect an experience, thought or action that is attributable to past events in the absence of conscious recollection of those events" (Dorfman et al. 1996:260).
3.5.2. Emotions and performance

One emerging area of interest is the study of the role of the emotions in many kinds of human activities. I include them here because they may be consciously or unconsciously experienced. It is likely that subtle changes in a person's physiology can affect cognition. Among the proponents of these are Damasio (1994, 2000) and Goleman, (1996, 2003). Perrig (1995) also challenges the historical emphasis on exploring 'pure' cognitive processes, proposing that "not only do organisms use phenomenological information in a decision making process before showing consciously controlled behaviour", but that "feelings and emotions, even physiological variants played a significant role. The phenomenological discriminations, feelings or emotions thus mediate information that is not yet knowledge". (Perrig 1995:25). Can we ever be aware of all the physiological and emotional factors that are at work as we think on things?

Another development in this area is the increasing interest in the effects of emotional states on people's cognitive performances. For instance, Frascara (1999) has suggested that the complexities of human cognitive performance are dependent on context and its multi-dimensionality. He wrote that:

"It is clear that previous experiences, fear, beliefs, arousal level, moods, expectations, purposes, models of behaviour, familiarity, adaptability, intelligence and temperament all play roles in cognitive performance" (Frascara 1999:78).

Interest in the influence of individuals' physiological states on their abilities to process information has produced much research in this area, especially from within the field of the cognitive sciences. It has offered some tantalising conclusions. Harber and Pennebaker (1992) have made the startling suggestion that people who have undergone traumatic events, and are better able to write well organised narratives on their ordeals, have better immune functioning. Bower
(1992) suggests “our emotional reactions are triggered by ‘computational demons’ (sic) in the brain that monitor how our plans are faring during execution,” (Bower 1992:5). He also proposed that the arousal of a particular emotion activates a repertoire of responses or action plans, so that it is as if each emotion produces a particular script, or perceptual category, or themes and ways of interpreting the world, as well as acting as perceptual filters. Strong emotional concomitants to learning produce strong learning, whereas depression and anxiety can decrease learning. Cannon (1999) believes that concepts such as ‘failure’ carry a powerful and influential emotional sting.\footnote{This was apparent in the Master Practitioners’ interviews of the participants on the course.}

Mandler (1992) takes a constructivist approach, proposing that people’s schemas (another term for cognitive maps) have emotional concomitants which express some aspect of an individual’s value system. These originate as visceral responses, which may involve a degree of autonomic arousal. Revelle and Loftus (1992) write that it is their “suspicion that both arousal and affect have substantive and some qualitatively different effects on information processing.” (Revell and Loftus 1992:141). Heuer and Reisberg (1992) found that vivid experiences produce vivid memories, and that arousal can narrow focus and lead to memory and perceptual impairment. Memory for detail was influenced by physiological arousal. There has also been considerable interest in the underlying neuro-physiological and anatomical systems associated with the links between emotion and cognition, such as McGaugh, (1992) and Ledoux (1992). Christiansen (1992) suggests that emotions may affect memory at two different stages; those of perceptual processing and a later conceptual processing stage.

More recently, Shevrin (2000) has reviewed the factors that operate unconsciously, and believes that the time is ripe for cognitive psychology to consider the role of the emotions in how people make
sense. “Affect, conflict, unconscious expectancies and anxieties are not given any consideration in cognitive research and thus the tendency is for the theories of the unconscious to be overly narrow and purely cognitive in nature” (Shevrin 2000:62). He suggests that even the way in which people categorise events is influenced by their emotional state. Damasio (2000) has made a strong case for considering emotions to be an integral part of cognition. “You simply cannot escape the affectation of your organism, motor and emotional most of all, that is part and parcel of having a mind”. (Damasio 2000:148).

I return to this theme in the chapters on the analysis of my interview transcripts, and especially in Chapter 10, which is an analysis of interviews about people’s experiences of learning, and the emotional concomitants of people’s memories of previous learning experiences.

3. 6. Conclusion.

This chapter has reviewed the idea that it is becoming a modern paradigm about consciousness that we cannot operate without using some kind of internal representations or mental models. These are claimed to be indispensable to remembering, learning, dreaming, thinking, solving problems, and most importantly, planning the future, motivating and achieving outcomes. They may be conscious or unconscious, or just beyond immediate awareness. Although much work in the cognitive sciences seems to be based on a predominantly Cartesian paradigm, more recently there have been inquiries into the roles of affective and unconscious factors in the construction of cognitive maps. The cybernetic approach may shed further light on the operations of cognitive models. There are indications that these involve many and complex dimensions, such as the senses, abstraction, bodily sensations, feelings, responses, values, beliefs and goals. They may also be organised at many levels of complexity.
The cybernetic model proposes that the feedback, calibration and the TOTE may be the most fundamental information processing mechanisms, operating at all levels of complexity in organisms, from the sub-cellular to the societal. The roles of language and communication perhaps play one of the most significant roles in creating, transmitting, organising and responding to information.

The question 'what role does language and communication play in the complex interplay of the many dimensions of internal models?' and 'what can such an inquiry illumine about the learning process?' remains a critical aspect of this research project. I review and explore the results of my own explorations in chapters 6 to 10. I propose that many of the processes that we use to construct our 'cognitive architecture', especially at the levels of internal representations and their sub-modalities, are influenced by language. I also believe that the time is ripe for inquiring into these aspects of cognition and learning.

Every reflection, including one on the foundation of human knowledge, invariably takes place in language, which is our distinctive way of being human and being humanly active. For this reason language is also our starting point, our cognitive instrument and our sticking point. (Maturana and Varela 1987:26).

The whole of language must be thoroughly ploughed up. (Wittgenstein, in Kenny 1994:277).

The fact that communication is a conditio sine qua non of human existence has been known for a very long time. (Watzlawick 1993:4)

4.1. Introduction

In chapter 3 I reviewed some of the literature on cognitive maps and some related areas. I explored the notion that Bandler and Grinder's ideas, and especially their work on internal representations and sub-modalities, had contributed to a wider understanding of the phenomenon of cognitive mapping and of how we make sense of experience. This is one of the main foci of my research. In a sense, what they explored was a little known aspect of human information processing. Although the lack of research into the role of language by mainstream cognitive psychologists has been judged as regrettable (Nelson 1996) there is an increasing amount being published on the possible roles of language in how we develop our understanding and create meaning.

The previous chapter considered aspects of cognitive mapping, and introduced a cybernetic viewpoint. The next two chapters are about language, especially in relation to how we know, and how language may influence our perceptions, our responses, and our cognitive mapping processes. They lay the ground for my approach to the
development of my interview schedule, my ways of questioning people, and the approach I took to analysing the texts from the second stage of the data gathering phase. NLP is as much about modelling the subjective processes that people use in processing information, as it is about the complex roles that language may play in thinking.

An overview about what has been written about language presents a problem, because it has been subjected to many different approaches. I review some of these in order to place NLP into a theoretical context, and to identify some of the ways in which it is distinct from other approaches. Chafe (1994), has pointed out that in the present time, “the sciences that deal with language and the mind are currently in something of an epistemological crisis” (Chafe 1994: 8). He further suggests that “theories of language are swimming in an alphabet soup whose ultimate contribution to the understanding of language is murky” (Chafe 1994:21). This suggests that we need to study language beyond its grammatical constructions or genres, which have been among the main pre-occupations of many engaged in using Discourse Analysis.

I suggest that the main reason why an understanding of language is so essential to any communicator, and especially to teachers, is because there is increasing interest in the ways in which certain linguistic forms may influence both perception, and the making of meaning for the listener. Learning must surely, in my view (and personal experience) involve the development of personal meaning. This inquiry is also about some previously unexplored ways in which people use words to make sense, and conversely make sense of words.¹

¹ I review what emerges from my information gathering in Chapters 6 – 10, and then suggest a new model of learning processes, in which language patterns, as described by Bandler and Grinder (1975) may operate as
In this chapter I review some of the background theories about language and cognition that are current in the literature. This is also in order to place my research into an overall theoretical framework. My inquiry bridges both cognitive mapping and linguistics. There is a sense in which language emerges almost as the mirror image of cognition. Their separation seems to be convenient yet does not reflect the complexity of their interaction.

Because I use NLP in my data gathering and as one of the main foci of this inquiry, I explain the model of language that Bandler and Grinder (1975) developed in the 1970s, in some detail, particularly with a view to exploring the possible links between language, cybernetics, the creation of internal representations, mental models and epistemology. This is in essence what this inquiry was about.

Central to Bandler and Grinder’s views was that language cannot be separated from epistemology; language is as much about communicating what to know as how to know. This approach underpins my own thinking and research into language and thought. Much modern research in this area now considers language as a process that is intimately linked to acts of cognition, (as explored in Chapter 3). With the increasing interest in cognitive linguistics, it is coming to be believed that “language (is) an integral part of human cognition, not an autonomous faculty independent of other cognitive functions”. (Paradis 2001:48). I suggest this is highly relevant to Education; it is mainly through teachers’ communication that knowledge is constructed by learners in the classroom. For this reason I give the topic of language more than a cursory glance.

‘drivers’ of certain epistemological processes necessary to the construction of cognitive maps. This idea is explored in Chapter 11.
4.2. Language and cognition

There have been many attempts to understand the role that language plays in cognition. Nelson’s (1996) research focused on the role of language in the development of children’s conceptualisations. She describes an experiment, which involved observing a group of mothers and children visiting a museum. The mothers themselves were of two types; those who talked to their children about what was going on, and those who merely answered questions. The second group of mothers also differed in that they would answer their child’s questions by mentioning practical matters, such as where a child left a toy. The mothers that talked to their children also used a narrative form. Nelson observed that “the narrative format organises the memory as a coherent whole, representing the perspective of consciousness as well as the perspectives of action [...] children are learning how to remember, not what to remember”, (Nelson 1996:168).

Bruner (Sutherland 1992) believed that language was one of the main tools for accelerating learning, and urged that it be used to help develop children’s understanding. He (Bruner 2002) added that there were two main constraints to our understanding. One was that “our evolution as a species has specialised us into certain characteristic ways of knowing, thinking, feeling and perceiving” (Bruner 2002:11). The second constraint was the complex nature of language itself.

The constructivist movement proposes that children build up their concepts from their experience of the world, and that teachers facilitate this process. How if not through language? (This is one of Vygotsky’s central questions; I review his contributions later in this chapter). Nelson (1996) also urged that language should be understood as a catalyst for cognitive change during early to middle childhood, and that it was “surprising how little attention is paid to language in current psychological theories of cognitive development”, (Nelson 1996:3). Fauconnier (1997) echoes this, urging that it is time that grammar should be recognised as “cognitively motivated, and ...
that understanding grammar in its context ... will yield insight into cognitive organisation" (Fauconnier 1997:67). Later he (Fauconnier and Turner 2002) suggested that words actually activated neuronal patterns.

This chapter is an attempt to explore some theoretical aspects relating to such ideas, and to dissect (as it were) some of the epistemological and ontological connections between language and thought. I rely on Bandler and Grinder’s metamodel of language structures as the main conceptual frame within which to start this inquiry, (Bandler and Grinder 1975).

Language and thought may be inescapably intertwined, but we do not yet know enough about the specifics of their relationship. Sandra (1998) wrote that “cognitive linguists, as their name implies, set out from the working hypothesis that language cannot be isolated from general cognition and must be studied with the explicit purpose of finding its cognitive underpinnings” (Sandra 1998:362). This project attempts to do just that. Teaching can be said to be essentially about the facilitation of sense making, and learning about constructing a mental model of the knowledge to be learned. Rasmussen, (2001) for instance, considers that language acts metaphorically as a scaffold, so that when teachers communicate with their pupils, they are in a sense building a framework within which the pupils construct their own unique understanding. Thus, “the student’s understanding of what a teacher says is a product of the student’s own construction” (Rasmussen 2001:577).

My approach to language is to view it as more than transmitting information; it also transmits messages about how the information is to be coded and de-coded. This epistemological dimension, which was recognised by Korzybsky (1958) and Bateson (1972) demanded further investigation, both from the point of view of the literature in the field, and my own data gathering and interpretations.
Epistemology was to emerge as a vital aspect of how language appears to enable us to make sense.

### 4.3. On some of our current approaches to language and thought

The emergence of an understanding of language as an essential agent in the mediation of internal cognitive processes has come down to us through the confluence of several different approaches. One of these comes from the ideas of early cognitive psychology, characterised by the works of people such as Vygotsky (1936), Miller (1977), Johnson-Laird (1983, 1983A) and more recently Fauconnier (1997), and Fauconnier and Turner (2002). Another approach stems from the works of linguists such as Sapir (1921), Whorf (in Carroll 1956), Wittgenstein (Kenny 1994) Edwards (1997) and Koenig (1998). A particularly rich source comes from the work on metaphor by Lakoff and Johnson (1980, 1987 and 1999), and Johnson (1987). Another approach is that of Discourse Analysis, which, although it initially concerned itself with the structures and genres of text and spoken language, is now becoming increasingly concerned about the importance of inquiring into the relationships between language and thought. (Chafe 1994, 1996).


It is becoming increasingly acceptable to believe that we respond to information at both a conscious and unconscious level. This idea was central to the way in which Milton Erickson worked with his patients.
(Bandler and Grinder 1957A, Erickson and Rossi 1989). Erickson was one of the people from whom Bandler and Grinder drew inspiration and many of their insights. If language is considered as a critical component of information processing, then many questions arise about the possible relationships between language, how we learn, and how we construct our internal worlds. Other questions also arise, such as, how is language processed? What are the roles of what are traditionally termed conscious and unconscious ways of processing information? More importantly, what is it in us that responds to language, and enables us to make sense of it? What is the phenomenon that mediates this alchemy of creating meaning?

Another recently emerged school is that of cognitive linguistics, which seeks to understand how language and cognition are related. Its development appears to have been catalysed by the work on metaphor and categorisation by Johnson (1987), Lakoff and Johnson (1980), Lakoff (1987), Lakoff and Johnson (1999), and the ideas about mental spaces inspired largely by the work of Fauconnier (1884,1997) and Fauconnier and Turner (2000, 2002). Cognitive linguists recognised the difficulties of studying the complexities of language and thought (Gibbs and Colston 1995). These approaches are different from those of Neuro-linguistic Programming, yet based on the same premises, that a study of language may lead to insights into cognitive processes.

4.4. Distinguishing between map and territory

Any exploration of the connections between language and thinking raises many philosophical questions. Not least of these is the central ontological conundrum of the relationships between what we actually 'map', as it were, through our internal cognitive re-creations of experience, and the world that is being mapped. Words, by virtue of the fact that they are essentially symbolic representations of something, and not the something they represent, must play some intriguing roles in human information processing. Edwards (1997),
with no reference to Korzybski, comes to much the same conclusion about the relationships between maps and territory. "The classic underground map distorts scale, direction and distance for the sake of functional readability, omitting an infinite number of possible details", (Edwards 1997:226). This echoes one of the main presuppositions about language and thought on which NLP is built; that words themselves may themselves be something like metaphorical maps, in the Korzybskian sense (Korzybski 1958), and not territory they refer to. They may further also be instrumental in mapping. Weick (2001) suggested that sense making is analogous to mapping; "(it) resembles more closely the activity of cartography..." (Weick 2001:9).

Rom Harre has suggested that there were two major paradigm shifts in the cognitive sciences of the 20th Century. (Harre 1994). The first was the emergence of Behaviourism, the second resulted in a focus on understanding more about the internal cognitive processes that people used to construct their own maps, which then also yield meaning. I have reviewed some ideas about these in the previous chapter. With the coming of this second revolution, the links between language and consciousness emerged as a central concern to anyone trying to explore more about cognition. Harre proposed that this second revolution was influenced by both post-positivist science, and the influence of Wittgenstein's views on the nature of language. In his view, it was invalid to separate language from the other cognitive processes that people used to make sense. His particular approach to such questions suggested that:

Concepts, the bases of thinking, are expressed by words, and words are relocated in language, which are used to accomplish a huge variety of tasks... in this view, our delineation of the subject matter of Psychology has to take account of discourses, significations, subjectivities and positionings, for it is in these that psychological phenomena actually exist. (Harre and Gillett 1994:21-22).
His position is close to that of Vygotsky, who, working mostly in the 1920s and '30s from within a Marxist context, believed that speech and words played a central part not only in the development of children's thought but in human consciousness as a whole. (Vygotsky 1939). Put more simply, what do the words we inherit from our milieu actually do to our cognitive processes? And no less important, how do we go about finding out? What sorts of methods are most suitable to uncovering the interplays between them? And if it is true that language creates internal meanings and recreates 'reality', then language has an epistemological function as well. Wittgenstein asked whether it was possible to think a thought without language, or even whether it was possible to separate the two, (Kenny 1994).

Fauconnier has pointed out (Fauconnier 1997) that much of traditional linguistics has concentrated rather exclusively on syntax and phonology. This focus on patterns and form neglected questions about other possible functions of language. In fact, he urges that language studies could suffer from ignoring the complex dynamics of meaning construction. There is a sense in which there has been a third revolution in our approach to cognitive processes, which was when the role of language as a constructive and epistemological device came to researchers' awareness. The focus changed; “it was urgent to concentrate on the difficult problem of meaning construction”. (Fauconnier 1997:7).

Although Fauconnier claims that his own approach is predominantly positivistic, he proposes that we not only have access to 'scientifically obtained' knowledge about language production, we can also validly use “speaker intuitions about possible understandings of expressions in various settings”. (Fauconnier 1997:7). This appears to encourage the reliance on data obtained through different kinds of introspection. For mainstream psychology within the positivistic tradition, there is a perception that such data may be polluted by the lack of clarity about anything dredged from the murky depths of subjectivity, let alone the dangers of the attendant methodological traps.
It follows that such a revolution in our understanding of cognitive processes makes the dynamics of language of central concern. What I mean by dynamics is the actual conceptual and epistemological processes that are behind both the production, and the processing of language. Sometimes much linguistic analysis was concerned with the descriptions of patterns and forms. Now the focus is on its epistemology and how it may be an active agent in the construction of meaning itself. Recently Fauconnier, writing from his standpoint as a cognitive psychologist stated that: “It is a constant assumption throughout [my] work that grammar is cognitively motivated and, correspondingly, that understanding grammar in its context of use, (rather than in purely autonomous structural terms) will yield insight into cognitive organisation” (Fauconnier 1997:67). This indicates the importance of considering language, and language production, as containing some (perhaps) basic epistemological directives, from which it may be difficult for our ways of knowing to escape.

4.5. Vygotsky, Sapir, Whorf and others.

Bandler and Grinder (1975) were influenced by many of the linguistic philosophers of the 20th century. The idea that language seems to be intimately bound up with our cognitive processes has a not unimpressive pedigree. Edward Sapir, working mainly between the two World Wars, actively proposed that language and thought were inseparable. In his introduction to his book Language, an Introduction to the Study of Speech, (Sapir 1921) he explains his ideas about this relationship.

We must ... imagine that thought processes set in, as a kind of psychic overflow, almost at the beginning of linguistic expression; further, that the concept, once defined, necessarily reacted on the life of its linguistic symbol, encouraging further linguistic growth. We see this complex process of the
interaction of language and thought actually taking place under our eyes. (Sapir 1921:17).

Sapir believed that we build up our ideas about what we hold to be ‘the real world’ unconsciously through the language and the culture we inherit. This creates culturally determined Weltanschauungen. This in turn influences what we pay attention to and how we interpret the wealth of our life’s experience. Benjamin Lee Whorf, one of Sapir’s students (Whorf, in Carroll 1956) believed that all ‘higher levels of thinking’ were dependent on language, and that the structure of a people’s language influenced how they understood their environment. Carroll summed up Whorf’s insights in the phrase “the picture of the Universe shifts from tongue to tongue.” (Carroll 1956:vi). This approach is generally known as the Sapir-Whorf hypothesis. Bandler and Grinder, and NLP in general, presuppose much the same thing. The central tenet of the Sapir-Whorf hypothesis proposes that different languages generate different kinds world views about experience, not only about ‘life the universe and everything’, but also about how it is to be known. Words may be the messengers of meaning as well as the agents of its construction.

The stand taken by Sapir and Whorf has its critics. Pinker (1994) vigorously dismisses it with ‘it is wrong, all wrong’. (Pinker 1994:57). In his view, linguistic determinism was a radical position which cannot be supported by semantic analysis. Pinker further criticises Whorf for basing some of his claims on the Apache language, yet claimed that Whorf had not studied this group of Amerindians. He also claims that many of Whorf’s ideas were supported by some over simplistic mistranslations of Hopi sentences. In addition, he explodes the myth about the much quoted example of the number of words that Eskimos have for snow as a ‘factoid’ which has misled generations of students of linguistics, describing it as the Great Eskimo Vocabulary Hoax (Pinker 1994:64).
Edwards (1997) also offers criticisms of Whorf; among them the problem of comparison between two different languages, and the elicitation of the exact concepts behind certain words. Whorf claimed that the Hopi Indians, whom he studied, had no concept roughly equating to the linearity of time. Silverstein (Silverstein 1996) has criticised Sapir's work, suggesting that he was not always entirely accurate in his analysis of the texts that he obtained from talking to native Americans. De Beaugrande (1997) has also criticised Sapir's approach for being too 'mentalist', and not making the distinction between what de Beaugrande calls *langue*, and *parole*. He suggests that language is "a leading modality for moving between the conscious and unconscious" (De Beaugrande 1997:10).

Edwards, (1997) when reviewing Whorf's work, also disagrees with his views on the lack of a Hopi conception of time. Edwards believes that the Hopis did have an idea of time, though it differs from that described by the vocabulary of standard American English. He also makes an interesting distinction between a 'strong' Sapir-Whorf Hypothesis, which proposes that language creates and determines the categories of thought and perception, whereas the 'weaker' version would be that language rather *influences* thought. One of the reasons for ridiculing the strong version was that it was impossible to demonstrate, 'let alone test' such a hypothesis (Edwards 1997:209). The weaker version may be a more acceptable theoretical starting point; it certainly describes some of the things I set out to do in this inquiry.

Sapir and Whorf were not alone in their fascination with the complex relations between languages and consciousness. On the other side of the world, in what was then the USSR, Vygotsky was pursuing his understanding of the relations between language and the development of thought. Vygotsky, working within the Marxist tradition of the early part of the 20th Century, concerned himself with the importance of language to the intellectual development of the child. For him, language was a part of the child's environment, and
therefore part of his or her historical and cultural context. For him it was essential for a child’s learning that he or she be spoken to by the teacher. In this he differs radically from Piaget’s views of children’s conceptual development. Among other things, Vygotsky was interested to observe children actually talking to themselves as they were learning. From this he concluded that speech was one of the most important catalysers of children’s conceptual development. (Vygotsky, in Kozulin 1986). For Vygotsky, the teacher’s communication was integral to a child’s conceptual development. Furthermore, he proposed that language and thought were interactive and interdependent. “The relation of thought to word is first of all not a thing but a process; it is a proceeding from thought to word and conversely, from word to thought.” (Vygotsky 1939:33).

Vygotsky has been criticised for his insistence on the importance of the distinction between psychic and social processes by Rasmussen (2001) who proposes that this is a false dichotomy. He suggests that if systems thinking is applied to these concepts, then they become in effect two aspects of the same system, (Rasmussen 2001). However, from thinkers such as Vygotsky, there arose the fundamental question of how mere strings of words could be interpreted and processed to make meaning in human thought. Vygotsky was also one of the first psychologists to assign significance to the activities of inner speech, which he considered as essential to people’s thinking processes. He urged that psychologists should inquire into the functions of this aspect of speech. “Without a correct understanding of the psychological nature of inner speech, there is no way of explaining the relation of thought to words in all its complexity” (Vygotsky 1939:37). He also held that inner speech had a specific function governed by its own laws, and that it was distinct from ‘outer speech’. It was also Vygotsky’s view that words play a central role in both the development, and continuing functioning of human thinking. His theories were drawn largely from his own observations and experiments. Sapir and Whorf, on the other hand, pursued their goals through the study of different languages and their structures.
Vygotsky also played a role in opening up this area to further exploration. More recently, Frawley (1997) has written extensively on Vygotsky's approach. He suggests that "higher thought is instrumental and involves the deferral and recasting of the external world, never its direct apprehension on its own terms", (Frawley 1997:96). He believed that "speakers of different languages have divergent, and even perhaps incommensurable learning tasks in constructing meta-conscious thought", (Frawley 1997:97). He also proposes that an approach to understanding language in both its inner and outer forms, requires the researcher to distinguish between a language of thought and a language for thought.

This is similar to Bandler and Grinder's approach, (1975) who, in proposing what they called the meta-model of language (to classify the different processes in which the cognitive and linguistic aspects are inseparable) sought to do just that. Grinder's roots in linguistics (Grinder and Elgin 1973) aided this development. One could say that their aim was to produce a language for thought. In Frawley's view, the Vygotskian approach leads to the conclusion that thought and speech are not identical, but come together just where mental content comes into focus in what he calls meta-consciousness, (Frawley 1997). He furthermore asks "how does language make it easier to think thoughts if, indeed, you were going to have them anyway?" (Frawley 1997:175). Working with people’s responses at the sub-modality level of consciousness during this research project also led me to wonder about the same thing. ²

Vygotsky’s approach was distinct from that of Piaget, because he believed that language played an important role in the formation of concepts. Nelson (1996) judges that Piaget’s work is based upon

² I address this in chapters 6 - 9 where it became obvious that my collaborators were using a lot of internal dialogue.
abstract logical operations independent of language, with a minor role assigned to symbolic representation, (Nelson 1996). Baldauf (1997) goes further, and, as it were, throws down the gauntlet by suggesting a more extreme view, namely that it is possible that the language faculty is really the whole cognitive system. I hesitate to agree with this point of view; it seems to me that language and cognition are intimately linked, but separable, as distinct logical types. Language is not thought, it is phenomenologically only an aspect of thought, yet there is a sense in which the two seem to be so interdependent that they could be considered as two aspects of the same complex process of knowing. Using the terminology of systems thinking, they could be viewed as two aspects which subsume a more complex whole.


One of the discoveries that was revealed from my own background reading was the existence of many different schools of thought about language and cognition. Many of these seemed isolated from one another. Not only did they stem from different groups (factions may be too strong an expression) but they seemed to not know of, or ignore, many of the ideas and writings of others outside their own narrow fields. For instance, in the writings of many of the mainstream cognitive psychologists I have read, the work of psychotherapists such as Watzlawick and his co-workers are rarely cited, neither is much included from the literature of the therapeutic tradition, let alone Milton Erickson’s work on language and change.

Conversely, the therapeutic tradition shows an almost lordly disdain for the findings of mainstream cognitive psychology and its laboratory based ideas. I have often found similar ideas expressed independently among these different groups, and when I referred to specific bibliographies, it was not unusual for me to be surprised that other people with similar concerns had not been cited. In particular, one of the traditions that stands alone, seemingly ignored by mainstream
the traditions that stands alone, seemingly ignored by mainstream cognitive psychology, (let alone learning theory) emerged from the spread of the practices of one particular school of Psychotherapy, one of whose inspirers was Gregory Bateson and his colleagues. This is the Palo Alto school (Watzlawick et al 1967), which uses, among others, a systemic and cybernetic approach.

The researcher may sometimes happen upon some surprising simultaneous discoveries in the literature. For instance, Fauconnier, (1994) a contemporary of Watzlawick, proposed the idea that language creates ‘mental spaces’ which may be organised at different levels. He produced ideas in many ways close to those of Watzlawick’s and his co-workers. I perceive little to distinguish Fauconnier’s notion that these mental spaces are organised in a hierarchy of some sort, from Bateson’s thoughts about logical levels. However, Fauconnier does not seem to have referred to either Bateson or Russell’s ideas about logical thinking. Bateson’s and Russell’s ideas are, however, central to Watzlawick’s approach to therapy and change.

Furthermore, it is rare to see Gregory Bateson cited. His views on the origins of schizophrenia as a pathology of communication within families, appearing as early as 1960, presupposed that the patterns of communication between people actually influences the ‘victim’s’ cognitive skills by distorting them. (Bateson 1960). This implies that language may actually create adaptive or maladaptive thinking styles and patterns of response in others, and must therefore play some role in the formation of people’s ways of thinking.

Fauconnier, and Turner (2002) have published extensively on their ideas about mental spaces and conceptual blending. Their models of how we make sense are complex, and have lately included more about the role of language. However, their views do not seem to be based on empirical research, as there is no apparent mention of what data they base their conclusions on. Neither do they seem to explain any methods that they employed. Their explanatory models rely
greatly on what is essentially a metaphor system of spaces and the coming together and separation of spaces in the mind. Yet they have some interesting insights into language. "Language is the surface manifestation of a capacity. It is a singularity of function, and so nothing prevents it from having arisen from a basically continuous and adaptive process of evolution." (Fauconnier and Turner 2002:177). For them, words activate neuronal patterns, and are also active in blending, compressing and enabling other processes that they believe enable people to make sense of information.

In many ways, Fauconnier’s notion of conceptual blending is not unlike Bandler and Grinder’s suggestion that many internal processes such as making linkages, and categorisation are essential to the making of meaning; the critical difference is that Bandler and Grinder actually suggest a typology of language that both reflects, and is believed to activate, such processes. Their general outlook finds echoes in the works of Maturana and Varela (1998). They proposed that we ‘exist’ in language, so that “the domain of discourse that we generate become part of our domain of existence, and constitute part of the environment” (Maturana and Varela 1998:234). “...it is by languaging that the act of knowing [...] brings forth a world... we are constituted in language, in a continuous becoming that we bring forth in others.” (Maturana and Varela 1998: 234-235). However, Bandler and Grinder attempted to explain some of the more specific aspects of the question ‘how does language shape our knowing?’

As I have used NLP as one of my approaches to this project, it may be appropriate to consider Bandler and Grinder’s typology of the processes inherent in language in more detail. In their view, language shapes how we know. This model is not usually accepted as having an ‘academic’ pedigree, and is often largely ignored as ‘weird’ or ‘new age’. It also has its critics, (Robbie 2000, McWhirter 2002, 2003, Craft 2001). Nevertheless, here I offer some of the history of its emergence, and the basic presuppositions on which it operates, as it was one of my main approaches. I also consider some of the
implications of Bandler and Grinder’s model, and show how it links to other emergent ideas about language and thinking. Not least, I have explored some philosophical issues in the form of my own speculations and introspections.

Richard Bandler was originally one of John Grinder’s students at the University of California, Santa Cruz. Grinder was himself influenced by Chomsky’s work on linguistics, and his model of transformational grammar, (McLendon 1989). Chomsky proposed that we have innate abilities to structure a string of words in order to make meaning. Grammar is thus an innate ability. Information is transformed from what Chomsky calls ‘deep structure’ (Chomsky 1965) to the surface structure of language through a transforming process which results in the deletion of information. It is never very clear what Chomsky means by deep structure, and interestingly the term is not used in his later writings, being relegated to an end note (Chomsky 2000). For Chomsky (1965), the process of understanding sentences was also predicated on an individual’s ability to assign words to categories and sub-categories. Sentences thus have two different categorical components, lexical and categorical. A grammar contains a syntactic component, a semantic component and a phonological component, all of which may be processed differently. Language, in Chomsky’s view, was thus also indisputably a tool for thought, (Smith 1999).

Chomsky’s thinking has been criticised for its Cartesian slant, and that he ignored the Mind-Body problem. De Beaugrande (1997) accuses him of denying the scientific status of many of his predecessors such as Saussure, Sapir and Hjelmslev, as well as indulging in confrontational rhetoric. Most importantly, he criticises Chomsky for not being empirical enough; for choosing to ignore making observations, and relying on his own ‘model of competence’ ,(De Beaugrande 1997: 32) for his extensive theorising. He also accuses him of using ‘technical fictions hedged round with rhetorical moves’ (De Beaugrande 1997:45). Lakoff and Johnson (1999) are also trenchant in their views on Chomsky’s limitations; they believe that
from Chomsky’s perspective, science studies ‘essences’. Linguistics likewise is concerned with the essence of ‘language’, namely pure ‘syntax’. Phenomena outside the essence of ‘language’ are not worthy of being called linguistics, and thus not ‘interesting’, (Lakoff and Johnson 1999:479). They are dismissive of Chomsky’s views, arguing that much of the research in linguistics over the last few decades has indicated that his models have little validity. Farkas and Li (2001) also criticised Chomsky for his structuralistic approach, urging that a more connectionist approach was more a valid tool for understanding language.

Whether such accusations of mentalism and the accusations of an absence of any empirical basis to these theories render them valid or not, Cartesian dualism remains part of the western scientific paradigm that perceives and perpetuates the dichotomy between mind and body, mental and physical, subjective and objective, internal and external. Smith (1999) has dismissed such apparent (and linguistically mediated) splits as putatively incoherent, and not necessarily invalidating the Chomskyan points of view. Bandler and Grinder went further; they rejected the Mind-Body problem as an insignificant and outdated construct. In linguistic and historical terms, mind and body are both abstractions with little useful meaning, except as curiosities belonging to the categorisation of redundant philosophical traditions. Systems theory, according to Rasmussen, does not share these dichotomies, and does not regard thought as distinct from language and communication, (Rasmussen 2001).

Viewed from the standpoint of cybernetics, human information processing is thought of as involving all of the systems of the living body. There cannot be separation between mind and body. The distinction is purely linguistic.

De Beaugrande (1997) reflects that the old dualisms have not been of service to linguistics. Chomsky himself (2000) holds a similar position, stating that:
“Distinctions between mental and other aspects of the world, in these respects, seem unwarranted, except in one respect: our theoretical understanding of language, mind and people generally is so shallow, apart from limited domains, that we can only use our intuitive resources in thinking and talking about these matters”. (Chomsky 2000:138).

Whatever the controversies about Chomsky’s notions of deep structure and his tendency towards theorising within a mentalist perspective rather than engaging with the domain of data gathering, his ideas have nevertheless been a fertile ground for Bandler and Grinder. They were instrumental in the development of some insights into the one of the most interesting aspects of language, namely, that it is both communicative and epistemological in its functions. In a sense, they used Chomsky’s original ideas as one of their starting points. This sets them apart from cognitive linguists such as Sandra (1998) who proposed that “linguistic analysis alone cannot definitely answer questions of a (mental) representational nature...” (Sandra 1998:367).

For Bandler and Grinder, the essence of NLP was to use language to investigate language and thought. An inquiry into how we make sense is as much a linguistic investigation as it is an exploration of some of the ways into sense making. Their own views of deep structure, however, seemed to change over the years; in Patterns of the Hypnotic techniques of Milton H. Erickson M.D. (Bandler and Grinder 1975A) they use the concept of deep structure as a ‘given’. Later, (Grinder, Delozier, Bandler 1977), deep structure is treated more as a word meaning the profoundly embedded, complex constructs or views of which the individual person may not be consciously aware. The concept remains vague, and difficult to define.
4.7. Setting the stage for the linguistic part of NLP

*Philosophy may in no way interfere with the actual use of language; it can in the end only describe it.* (Wittgenstein, in Kenny 1994:269).

NLP developed from a number of sources, and the serendipitous coming together of a number of somewhat anarchic thinkers very much in tune with the Zeitgeist of California in the 1970s. It can be said to be derived from Milton Erickson’s insights into the unconscious effects of language, Fritz Perls’ approach to therapy, Gregory Bateson’s epistemology and cybernetic theory, and Grinder and Bandler’s original model of language structures, some of it derived from Chomsky. The young Richard Bandler was Gregory Bateson’s neighbour (personal communication) at the time when Bandler was a student of psychology and cybernetics at the University of California at Santa Cruz in the 1970s. Through Bateson he also got to know Milton Erickson, a psychiatrist who specialised in Hypnotherapy, and was well known for his powerful uses of therapeutic language. Grinder was a Professor of Linguistics at the University of California at Santa Cruz, where Richard Bandler studied. At the same time Grinder was also a covert operator for the American Army, (McLendon 1989).

During his studies, Bandler became increasingly disillusioned with the traditional academic psychology that was taught at the time, railing against it for not being applicable to the ‘real world’, (Bandler, personal communication, McLendon 1989). At the time, Bandler was intrigued by Gestalt Psychology. He was introduced to Fritz Perls himself by Grinder, and ended up editing some of Perls’ later works, in particular his book *The Gestalt Approach and Eye Witness to Therapy*, (Perls 1973).

Bandler and Grinder created an informal group of like-minded people to explore and experiment with a number of different ideas and linguistic techniques that appeared to produce changes in people. Their aim was simply to find out ‘what worked and what did not’. This
included exploring and investigating Erickson’s hypnotic language patterns, Perls’ exercises in therapeutic dialogue, Grinder’s insights into language, and Bateson’s cybernetics. Sometimes there was a dabbling in the esoteric, in particular from the works of writers such as Carlos Castaneda. One of their interests was in how to produce changes in people that would benefit them. Their explorations were not only informal, they seem to have been somewhat anarchic and chaotic, as well as extremely experimental, (McLendon 1989).

Milton Erickson’s therapeutic work had as one of its basic tenets, the belief that words influence an individual’s psychological life both in the present and the future. He also believed that people responded consciously and unconsciously to words. Bandler and Grinder were one of the few non-medically qualified people to be allowed access to Erickson personally, and to observe how he practised and thought. They became adept at identifying Erickson’s patterns of communication. Erickson himself wrote, (perhaps with his tongue slightly in his cheek) in his preface to Bandler and Grinder’s first book (1975A) about his hypnotic language forms:

Although this book by Richard Bandler and John Grinder ... is far from being a complete description of my methodologies, as they so clearly state it is a much better explanation of how I work that I myself, can give. I know what I do, but to explain how I do it is much too difficult for me. (Milton Erickson, in Bandler and Grinder 1975A:viii).

When Erickson was working with his clients he assumed that language and thought interacted, and that most of people’s responses to language took place below conscious awareness, (Erickson and Rossi 1989, Hall 1989). His approach has since been further developed in the fields of Psychiatry and Psychotherapy at the Mental Research Institute, Palo Alto. (Watzlawick et al 1967, Watzlawick and Weakland 1977, Watzlawick 1978, 1983, 1990, Weakland and Wendel 1994). It also laid the foundation for many of the interventions made in Brief
Therapy, (De Shazer 1998). The researcher wishing to follow in this tradition faces some awesome methodological challenges. This model of language proposes that much of our responses to communication take place at an unconscious level.

4.8.1. The NLP approach to language and thought

Bandler and Grinder proposed that the deletions, distortions and generalisations within language can act as epistemological directives that influence how meaning is to be made from words that are spoken. There remains the spectre of deep structure. Robbie (2000) has argued that linguistics had moved on, and the concept of deep structure is now becoming redundant. It may be more useful, however, to think of linguistic directives as imparting information about how a message is to be understood. This is believed to be the epistemic part of language, which elicits unconscious responses, often for both the sender and the receiver.

Chafe (1994) came to a similar conclusion twenty years after the publication of Bandler and Grinder’s first book. (Bandler and Grinder 1975). In Chafe’s view, grammar is a set of “mental processing instructions [...] designed to trigger specific mental operations in the mind of the receiver”, (Chafe 1994:180). He also proposed that “language suggests that we store and activate ideas of particular referents and that we also store categories and schemas that allow us to “make sense of” those ideas by treating them as instances of things already familiar”, (Chafe 1994:35).

Bandler and Grinder went further in their ideas about this emergent area. Not content with simply stating that there was an epistemology within language structures, they produced a model about language, which they called the meta-model. This is a model about a model, or a map of a map. It is also about ways of categorising both the content of the information that is transmitted, and how it is to be decoded at the process level. Most importantly, it is the first real attempt to
produce a typology of various language structures according to what they do to information processing, as well as what instructions they give to guide the construction of knowledge.

An understanding of the processes behind languaging may thus provide a way of listening to, and analysing what people say, and thus attending to the thinking structures and processes behind the surface structure of the words. In my view, it adds another dimension to the analysis of discourse and text. It also produces a way of interrogating conscious experience (both one’s own and that of others), which is innovatory. My own approach relies heavily on this; it became one of the most important tools with which to design and carry out my interviews. I then used it to analyse the transcripts of both my own interviews, and those of my assistants. I was thus using language to test people’s responses to differently syntaxed expressions. I also used Bandler and Grinder’s model to elucidate some of the processes that I believed were revealed by a using NLP as a method for textual analysis which was significantly different from that used in mainstream Discourse Analysis.

4.8.2. Deletions, Distortions and Generalisations.

Bandler and Grinder (1975) originally proposed that there were three main epistemological processes that occurred between the contents lodged in the ‘deep structure’ (in a ‘Chomskyan’ sense) and the Surface Structure of Language. These were deletion, distortion and generalisation. If we abandon the notion of deep structure, then the question ‘how does language originate in the human information processing system?’ arises. It seems that at one level we code information primarily through our senses in the form of internal representations, which I explained in the previous chapter. These could be considered to be antecedent to language production. There is a discontinuity between the analogue coding of the inner world of the senses, and the production of words which are digital. (Bateson 1972).
Deletions, distortions and generalisations are thought to occur whenever the conceiver’s experience becomes ‘languaged’. One of the unavoidable consequences of the translation of information from the domain of internal representations to that of speech is the deletion of the many details in the internal representations. Therefore, what was being spoken about could never convey the whole content that originally generated the speech act. In the act of verbalising the content of consciousness, a different logical type has to be used. Language and consciousness are different aspects; languaging experience involves the transformation of the information from one logical type into another. It also involves categorisation. Thus, changing an experience into words inevitably must delete information, just as making a map of an area can never include every detail of the ‘real’ terrain.

According to this model, in any written text or spoken words, there must always be missing information, deleted, as it were, from its original source from the domain of internal representations and other cognitive structures. Language may thus be mainly communicating information about the map rather than the terrain. An illusion of reality is created through the individual’s response, who processes the information received by filling in the missing bits for him or herself. (This was certainly the case in my own data gathering, where individuals could report on what they ‘did’ at the level of internal representations and sub-modalities in response to the words I presented to them in the form of my interview questions. My collaborators always made sense of my words in their own way.)

Perhaps, every time speech is used, it also generates a mini-Zeigarnik effect on the listener. The Zeigarnik effect describes the influence of incomplete information on human thinking. It is based on the premise that the human processing system tolerates incomplete information with difficulty, (Zeigarnik 1965, Mazur 1996). I suggest that we add, or construct internal representations to fill the gaps. The Zeigarnik effect can be thought of as a kind of drive towards the perpetual
resolution of unfinished business, or the filling in of missing gaps. Mowrer (cited in Miron 1967) wrote that “One person, by the use of appropriate words or other signs, can arouse or “call up” particular meanings in the minds of another person”, (Miron 1967:11). More poetically, and echoing some of Wittgenstein’s ideas, he further stated that “language, in short, is a sort of web that we spin between ourselves and the true essence of things, and we must constantly struggle to keep from becoming hopelessly enshrouded therein.” (Mowrer, in Miron 1967:38). This ontological fragility between language and what it is supposed to represent, is one of the most exasperating and intriguing aspects of this whole inquiry.

One of the questions I asked as I was gathering my data was: what do people do internally that enables them to fill in the gaps? What are the elements that are used to weave such webs? I believe that the data pointed to the existence of the phenomenon (or process) of people’s active participation in the making of sense. Bandler and Grinder suggested that the effects of hypnotic language patterns depended on this process. These are syntaxed in such a way that they may contain confusing and paradoxical messages. Listeners are ‘forced’ to make sense of them for themselves, thus producing a new thought or meaning. (Bandler and Grinder 1975A). Watzlawick states it more directly; that one can’t not communicate, neither can one not respond.³ (Watzlawick et al 1967).

Bandler and Grinder revealed that Erickson structured his sentences so that listeners had to make sense of the information in their own ways. (Grinder et al 1977). A typically Ericksonian injunction such as ‘You may be wondering about the things you are learning yet as you are sitting, relaxing and reflecting on all your experiences in many different ways now haven’t you’ makes little grammatical sense. However it is thought that it sends the listener on a deep internal search to make some sort of meaning. The followers of Erickson

³ Author’s italics.
would claim that the actual content evoked by the words spoken by the therapist is uniquely re-constructed by the individual who hears them. This active search for meaning is termed a trans-derivational search, in which a person actively scans stored information, accesses it, then uses it as their own semantic building blocks to construct a meaning unique to themselves, (Grinder, DeLozier and Bandler 1977). This is the essence of hypnotic language patterns; they create a response in which listeners are driven to make their own internal sense of the words, by structuring the information for themselves. In this way, it is believed, they achieve both meaning and closure.

4.9.1 Some hidden aspects of deletions

Deletion is an inevitable consequence of the languaging of experience. Bandler and Grinder distinguish between a number of different kinds of deletions, which I have listed in Appendix 5. There are two kinds of deletions which are interesting for the light they may shed on some of the basic processes we use to make sense. I have chosen to explore these as they are also examples of language structures which are both epistemologically and semantically significant. I have also used these as some of the bases for my questions in the interview phase of this inquiry. The ones I have chosen to illustrate this are comparative deletions, and nominalizations. I explore these in some depth, because they give a sense of how Bandler and Grinder's model may be considered to be more than just a superficial typology, but also a way to uncover some of the basic processes that we use to make sense. These explorations are my own thoughts after using introspection to uncover more about some of these processes in myself.

Comparative deletions are a distinct category of words in the meta-model. Examples include words such as better, worse, colder, hotter, lovelier etc. They occur when words or expressions are used which presuppose that a comparison has had to be made in order to produce that word. However, the actual scale or criteria on which the
comparison is based are deleted. This means the criteria on which the judgements are based are never explicitly stated. For instance, the sentence ‘the weather is better today’ contains the word better which is technically a comparative deletion. In order to initiate such a statement, a number of internal processes have had to precede it for the conceiver. The person uttering it has had to make a comparison with the weather yesterday, the day before, perhaps even the week before. The word better presupposes the existence of a graduated scale (from good weather through bad weather to perhaps English weather) and that a comparison has been made according to the scale, which is missing when translated into words, and then ‘understood’. Often uncovering the scale behind people’s patterns of comparative deletions through well aimed questioning may reveal a great deal about their internal maps, and the criteria used to make judgements. (Bandler and Grinder 1975). The question that arises from this is to what extent is the process of comparing a fundamental epistemological prototype, a kind of archetype of sense making? Bateson, in his search for understanding some of the basic epistemological processes that systems used, had suggested in 1972 that:

"...we can assert that any ongoing ensemble of events and objects which has the appropriate complexity of causal circuits and the appropriate energy relations will surely show mental characteristics. It will compare, that is, be responsive to difference. (Bateson 1972:315).

The importance of such conceptual scales which are actively (if unconsciously) brought into play in people’s cognitive maps was proposed by Johnson (1987), who observed that “scality does seem to permeate the whole of human experience ... this experientially basic, value laden structure of our grasp of both concrete and abstract entities is one of the most pervasive image-schematic structures in our understanding.” (Johnson 1987:123). Lakoff (1987) also believed that our metaphorical up-down schemata were like basic templates
structuring cognition. However, I suggest that in order for such basic scalar schema to be of any use, they must be accompanied by the process of comparison. Scales are useless without the ability to make comparisons.

4.9.2. Hidden comparisons.

In Baldauf's view (Baldauf 1997) comparison (Vergleichung) is a prototypical function. I like to think of such operations as basic epistemological processes. So words like better, worse, prettier, lesser, and sentence constructions involving expressions such as more than, less than, greater than, and so on, are transmitting information which is the product of a kind of hidden internal 'holding a datum against an internal scale, comparing it to the divisions on the scale, and then judging'.

The receivers of messages containing comparative deletions are then truly caught in the web of words, because they need to draw on their own hidden scales of comparison, (which may be different from that of others) and then generate a response from within their own subjective constructs. This can produce the illusion of agreement. Bateson wrote that “the living man is ... bound within a net of epistemological and ontological premises which – regardless of ultimate truth or falsity – become partially self-validating for him.” (Bateson 1972:314). For better or worse, such processes seem to be mediated through linguistic forms. Furthermore, it is almost impossible to utter a meaningful ‘better’ or ‘worse’ without having to use what is considered an almost archetypal epistemological process in cybernetics, namely the ubiquitous TOTE process.

If we look more deeply at the process of producing a comparative deletion, we uncover another complex layer of processing. What I propose happens, (for the sake of argument) is that the information to be evaluated is tested internally against a scale, found wanting or not, adjusted, tested again, and then transformed into words. To
simplify the process, it goes something like this. Was the weather *better*? First test it against my internal scale. Then get a yes or a no, (in cybernetic terms, obtain positive or negative feedback, and act on it), then make a judgement, and exit the TOTE. Only then can the word be uttered, or yield an illusory understanding in the hearer or reader. Even to ‘TOTE’ successfully involves comparing the present state with the desired outcome; self-correction to achieve the goal is only possible after a comparison has been made. Perhaps the transition from thought to language may also involve such a cybernetic loop. Perhaps scalarity, the use of conceptual scales in the formation of our internal mappings and sense making, is another epistemological prototype. Baldauf, (1997) also stressed the importance of scalarity, of vertical ordering, as a way of making sense of information, and which would be useless without the system’s ability to make comparisons.

The role of comparison as essential to how cybernetic systems processed information in order to maintain themselves was mooted by Norbert Wiener in the late 1940s when Cybernetics was still in its infancy. (Wiener 1965). He went on to explore the ways in which perception could be understood cybernetically. This led him to suggest that perceptual systems relied on an ability to compare incoming data in order to organise it. The TOTE process was an integral part of carrying out and completing such acts. “We centre our images around the focus of attention and reduce them more or less to outlines. We have now to compare them to one another, or at any rate, with a standard impression stored in memory.” (Wiener 1965:136).

Similarly, we could ask the question ‘how is it possible to assign information to meaningful categories without being able to perceive similarities and differences? How can it be possible to assign a hue such as violet to the category ‘red’ or the category ‘blue’ without scanning for similarities and differences, and then making comparisons before deciding to which category to assign the
information? It supports the view that comparing is a prototypical epistemological process, as are perhaps the abilities to perceive similarity and difference.

So ‘behind’ apparently simple language structures such as comparative deletions, there are complex processes, perhaps operating unconsciously, which have to be brought into action in order for the words to make sense. This is an example of some of the epistemological dimension of language making and language processing.

4.10.1. Nominalisations.

I want to explain the complexities of the class of words called nominalisations in some detail because they emerged as one of the foci for my inquiry. My interviewees reported some interesting effects of these types of words, which I describe in Chapter 6. Some of my interview questions were designed to inquire into the effects of nominalisations on my collaborator’s internal constructions. The responses that people gave were intriguing. The purpose of this section is to explore more about this class of words, so that the responses that were elicited in the first information gathering phase are placed into context.

If at a very simple level of explanation, the constructivists’ stance is that we actively participate in creating our ‘realities’, (Von Glaserfeld 1984), then bringing forth a world becomes “the burning issue of knowledge”, (Maturana and Varela 1987: 27). Such an activity may be associated with “the deepest part of our cognitive being, however strong our experience may be” (Maturana and Varela 1987:27). Wittgenstein (in Kenny, 1994) believed “that people who ascribe reality only to things and not to our representations take the world of our representations so much as a matter of course and aim no further” (Kenny 1994: 276). Wittgenstein was intrigued by the ways
in which our intelligence could be bewitched by means of language. Nominalisations are among the most bewitching of words.

Exploring Nominalisations may also shed light on what may be other basic epistemological processes. These kinds of words seem to have the power to illuminate, persuade and delude. Bandler and Grinder were not the only ones to describe these; they have been the subject of investigation by many others. Langacker, (1977) for instance reminds us that there are two basic lexical categories, nouns and verbs, which he proposes profile things and processes. Nominalizations are essentially ‘thing words’, and are at the same time, abstract nouns.

4.10.2. The tyranny of hypostatisation

Nominalisations are also deletions, because they are the product of turning a verb into a noun. They are abstract nouns from which the original process (a verb) has been deleted. (For this reason they are considered as deletions by Bandler and Grinder). The original verb form presupposed an activity, a process which has an implied duration in time. Nominalizations litter a great deal of every day speech. Words such as education, health, life, communication, relationship are all abstract nouns which in actuality do not have any objective existence yet behave as simulacra of something that does, perhaps because they have been made into nouns. Education can thus be seen as the reification of educating, health of healing, and relationship of relating!

4.10.3. Are nominalisations metaphorical?

In becoming nominalized, these words also become hypostatised; they are interpreted as something concrete. In reality, they refer to the existence of something that has no objective existence, because it is an abstraction. Yet they are treated as if they were concrete objects. They are no longer perceived by the conceiver as processes that take place within a time frame, but rather as entities that exist
independent of the variable of time. Time has thus also been deleted from the word at the level of presuppositions. This is a distortion lodged deep within the structure of our language and perhaps our cognition as well. The processes that the nominalizations have originated from have become deleted, and are thus not attended to.

This means that every time a nominalization is produced, it has been born as the result of a metaphorical shift. Metaphor always involves understanding one thing in terms of another.

I have already described some aspects of the metaphorical nature of thought in the previous chapter. It is becoming increasingly recognised that metaphors are a fundamental conceptual process which we use to make sense of communication and experience. Johnson (1987) has proposed that metaphor is “a pervasive principle of human understanding that underlies our vast network of interrelated literal meanings” (Johnson 1987:65). Baldauf (1997) develops the work on metaphor of linguists such as Lakoff and Johnson (1980, 1999) by suggesting that our main metaphorical system comes from the world of concrete objects (what she terms the Gegenstandsbereich\(^4\) in German). For her, both thinking and meaning were thus conceptualised as clearly defined and bounded objects. This involves a basic metaphorical and epistemological transformation. Whenever we nominalise, we therefore also ‘metaphorise’, because a process is now thought of as a ‘thing’. It has become concretised.

More recently, Thomas and Mareschal (2001) have proposed that metaphors also act as categorisers of information. To explore the epistemological paradox posed by the structure of nominalisations further, that “metaphor occurs when the novel input is not a member of the category to which it is applied” (Thomas and Mareschal 2001:16). Fitzgerald (1999) has proposed that providing new and useful analogies may be a powerful way of communicating novel

\(^4\) Roughly translated as the realm of solid objects.
ideas. This raises the possibility that our epistemology has the ability to transform abstractions into simulacra of concreteness through such reification; furthermore this process is in itself profoundly metaphorical in that it imposes on our understanding the tyranny of thinking about abstractions as concrete entities. So nominalizations also have ontological implications. The metaphor of concreteness imposes this notion on our understanding. It may be an unavoidable mapping process, a cognitive modelling task that is fundamental to how we process information, and then language it. We think and speak as if these abstractions had a concrete existence external to us.

It can be revealing to reflect on the notion that every time we use a nominalization, we may in fact be deeply deceived (and perhaps deceiving) both ontologically and epistemologically. We talk earnestly about the necessity to have more education, to have a better life, to fight poverty, to make democracy more attractive, to encourage good relationships. In each of these cases, the nominalization seems to refer to a solid object external to the speaker. This also raises the question of whether we can ever know the world as it is, or whether, in the weaving the conceptual web of our own making, we rely on the simulating power of nominalizations in our attempts to understand experience. Yet, paradoxically, in English and many other European languages, we cannot convince ourselves that we know without abstracting and concretising. Tutescu (1970) has, for instance, written extensively on nominal structures in the French language. Baldauf (1997) writing as a German speaker, refers to nominalizations as ontological metaphors, which transmute the original process into clear things or substances, and which then appear to occupy a location and even give the illusion of quantifiability.

Wiener (1965) suggests that our dependence on noun forms is a survival of the scholastic emphasis on substance, 'in a world where

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5 It has certainly been my experience as a French and German speaker, that these also rely heavily on nominalizations, German, in particular, seems to be very rich in them.
the noun was hypostatised and the verb carried very little weight' (Wiener 1965:127). Weick (2001) has proposed that there are a number of basic properties of sense making. Among these he suggests that experience is a continual flow, and that it only becomes understandable in terms of events, which can only happen when subjective or conceptual boundaries are placed around them. Lakoff and Johnson (1980) stressed the idea that the metaphorical use of entities was a fundamental cognitive device, assigning the metaphorical connections between ideas and objects to what they classed as the conduit metaphor.

4.10.4. Nominalisations as categorisers.

One of Gregory Bateson’s pre-occupations was with the epistemological conundrums that anthropological terminology had generated for him during his years in the field. In an essay written in 1974 (Bateson, in Donaldson 1991) he expressed his suspicions about the pervasive ways in which human epistemology needs to impose delimitations on experience.

As I see it, the fundamental idea that there are separate “things” in the universe is a creation of and projection from our own psychology. From this creation we go on to ascribe this same separateness to ideas, sequences of events, systems and even persons. I therefore ask whether this particular psychological habit can be trusted... (Bateson, in Donaldson 1991:77).

Thus nominalizations may not reflect an experience, but refer rather to a class of experience. Watzlawick, Weakland and Fisch (1974), exploring the paradoxes and contradictions that beset human thinking, stress that their work is inspired by Bateson, and some of his predecessors such as Russell and Whitehead’s explorations in their Principia Mathematica. This reveals the logical inconsistency of confusing a class with one of its members. Bateson had stressed that “we have a whole host of words which name classes of action without
identifying the members of the class ... What is ‘play’? What is ‘aggression’? ... It is not too much to say that a science of psychology might begin here”. (Bateson, in Donaldson 1991:74). Watzlawick goes further and points out the deception inherent in confusing the class with its member. "Any attempt to deal with the one in terms of the other is doomed to lead to nonsense and confusion,” (Watzlawick et al 1974:6).

Nominalizations are therefore one of the richest linguistic classes for exploring how language may influence the construction of our internal maps. They are one of the many ways in which language weaves a web of deceit, is profoundly metaphorical, creates illusions of the existence of non-existent entities, and generates a mistaken notion that there is clarity when there is only belief. Paradoxically, the English language without nominalizations is an impossibility; they are necessary to processing and storing information. They are also of primary epistemological interest in that that which is apparently perceived through their use, need not exist to make sense, (Butchvarov 1997).

Nominalizations were also among the main linguistic devices used by Milton Erickson. Bandler and Grinder were able to interpret and describe how Erickson used language to produce therapeutic changes in his patients, (Bandler and Grinder 1975A). They were among Erickson’s many linguistic tools. As soon as information is languaged, it deletes. Yet when it is heard, and made sense of, listeners fill in the gaps for themselves. Grinder, Delozier and Bandler (1977) claim that this is how internal changes may be produced in the context of therapy, rather than the use of “repetitious verbigerations (sic) direct suggestions and authoritarian commands” (Erickson, in Grinder, Delozier and Bandler 1977:ix) so beloved of more traditional hypnotherapists.

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6 I challenge the adventurous reader to try talking about any topic that involves levels of abstractions without using nominalizations with their attendant ontological and epistemological seductiveness.
Perhaps the only thing that can be said about nominalizations is that for all their complexity, possible treachery, (my own analysis of old German newsreels indicated that Adolf Hitler used them to great effect,) and the epistemological and ontological puzzles with which they seem to tease the enthusiastic seeker after truth, (itself a nominalization!) they are essential to how we organise and verbalise information from deep within our own unique internal mapping processes.

4.11 Conclusion

In this chapter I have reviewed some of the background theories of language in order to put Bandler and Grinder’s model in context. I explored the idea that there is an epistemological function to language, and that exploring how certain classes of words are produced also reveals underlying epistemological processes. When experience is languaged, one of the inevitable processes is deletion. I paid attention to comparative deletions and nominalisations, as they illustrate some of the complexities of language production. I then explored some aspects of their formation in detail, indicating that they are multifaceted in their origins as well as their effects. I described them in some detail, as they are a backdrop to my own inquiry into how people process language, and how it may be linked to cognition. The effects of nominalisations was one of my interests when carrying out this inquiry. I report on this further in chapters 5, 6 and 7 and 8. To sum up, it seems that the effects of language are fourfold; it can enable people to perceive, to conceive, and to receive information. It also has extraordinary powers to deceive. Lakoff (1987) urged that our understanding of both language and cognition in general must be changed considerably.

This chapter was a venture into this new area. It is also the theoretical foundation for much of my reflections on the data gathering phase. This forms the substance of chapters 6 – 12.
Chapter 5. The Imperative of Connections in Cognitive Mapping, and the Relevance of Presuppositions.

Clearly there are in the mind no objects or events, no pigs, no coconut palms, and no mothers. The mind contains only transforms, percepts, images etc, and rules for making these transforms. In what form these rules exist we do not know ... the rules are certainly not commonly explicit as conscious "thoughts". (Bateson 1972:271).

There are some safes which can be opened by using a certain word or a certain number; before you hit on the right word, no amount of force can open the door, but once you do so, any child can open it. Philosophical problems are like that. Wittgenstein, in Kenny (1994), page 269.

5.1. Introduction.

In the previous chapter I reviewed some ideas about language as epistemology, in particular some views on deletions and re-visited metaphors. In this chapter I explore other aspects of language construction which may illuminate other cognitive processes. These include the phenomenon of linking different domains of thought in order to create new meanings. I also include the concept of causality as part of our mapping processes. One of the aspects of language that I explore is the way in which it can create connections between two or more 'mental' events which, taken individually, may not immediately appear to connect to other concepts. This idea is not new; it has been extensively explored by Fauconnier, (1994,1997), Fauconnier and Turner (2002) and others. These suggest that meaning occurs through what they term conceptual blending. Fauconnier, in his original work on the concept of mental spaces (Fauconnier 1985) had proposed that connections were a part of idealised cognitive models, essential to making mental representations of reality. As such, they are also a basis for selecting certain actions. Weick and Bougon (2001) go further, and suggest that making connections between
events are basic epistemological processes which are imperative to cognitive mapping. I consider these ideas in some detail, because looking for connections between 'conceptual entities' in texts is one of the approaches I used in my analysis of the Master Practitioner’s interviews. Chapter 10 is mainly about these. Connections emerged as significant to the analysis of the texts. They also yielded some insights into the nature of people's conceptual maps. They may also be involved when people undergo transformative changes in their beliefs. For this reason I describe this aspect of Bandler and Grinder’s meta-model in some detail.

I prefer to remain with Bandler’s terminology, that meaning is dependent on 'how you connect the dots', and to use the term connections to explain linkages between two or more (hitherto perhaps unrelated) mental events or constructs. Connections are also a way of describing linkages between two concepts. I describe some of the kinds of linkages that Bandler and Grinder have proposed are embedded in syntactical structures. Originally they proposed a category of language structures which they termed distortions, (Bandler and Grinder 1975). Two of the four sub-sets in the category distortions are cause-effect structures and complex equivalences. Here the connections are easy to spot. There are two more sub-sets, lost performatives and mind reads, where the connections are more complex to tease out. I want to explore the notion that all four of these sub-sets rely on connections for the emergence of meaning. One of the structures that I was interested in when scanning the transcripts of the Master Practitioners’ interviews, were the types of connections that people had linked to learning, and used to construct their identity as learners.

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1 Personal communication.
5.2. Causality as significant to the mapping process

The search for causes to events and entities, and the use of causality as an explanatory principle, has something of the nature of an epistemological imperative. Talmy (1985) believed that what he called “force dynamics” (under which causality is subsumed) was a semantic category which had previously been neglected in linguistic study. He proposed that language uses certain categories to structure and organise meaning, and that force dynamics was a basic category which achieved this. Force dynamics refers to the notion that we use the idea of force, (which is a physical experience which becomes internalised as a metaphorical device) in order to understand, make sense, and map experience. Lakoff has described the concept of causation as one of the most fundamental of human concepts. “Such concepts are usually coded right into the grammar of language – either via the grammatical construction or grammatical morphemes [... ] the prototypical concept of causation is built into the grammar of the language, (Lakoff 1987:55).

Weick (2001) has proposed that causality is an epistemological primitive, even describing it as a cognitive archetype. The critical factor defining causal thinking is that two events, separated by time, are linked causally, and the antecedent event is believed to exert a (metaphorical) force on the later one, causing it, or something about it, to change. This is different from the views of Lakoff and Johnson, (1980), who reject the idea of the existence of what they term undecomposable primitives, proposing that causation is best understood as an experiential gestalt, an example of an ontological metaphor “grounded by virtue of systematic correlates within our experience” (Lakoff and Johnson 1980:58). Nevertheless they believe that “causation is a basic human concept. It is one of the concepts most often used by people to organise their physical and cultural realities”, (Lakoff and Johnson 1980:69). They suggest that our understanding comes from domains of experience, rather than individual concepts. By their term domains of experience I understand
that these are more than concepts; they are groups, categories (or whatever term seems most appropriate) whose main characteristic is that they have an internal structure. Freeman (1999) echoes Lakoff and Johnson's views, citing David Hume's proposition that there are no universal essences in reality, so the mind can frame a concept or image that constitutes a general term such as causality. The concept itself, however, does not exist in the world external to the concever.

5.3. Modal operators: carriers of information about future events?

One of the classes of words from the meta-model that I investigated in my interviews were modal operators. Stamenov (1977) has described these as "the prime examples of language as activity directed towards the accomplishment of certain goals" (Stamenov 1977:69). Bandler and Grinder identified two meta-model language structures which presupposed and communicated causal thinking. These were modal operators and cause-effect patterns. Chomsky (1965) had identified what he called modals as an auxiliary to meaningful sentence construction. Johnson, (1987) stated that his inquiry into modal verbs is actually "an investigation into a further cluster of extremely significant patterns of experience and understanding", (Johnson 1987:49).

Johnson draws heavily from the work of Eve Sweetser, (Fauconnier and Sweetser 1996) who argued that the different sources of modal verbs were related by metaphorical structures in which physical forces become a metaphor for the non-physical. He suggested that what he called 'epistemic modals' originate from the metaphor of the operation of a force or restraint which can be experienced as either internal or external. Langacker (1998) has argued that a modal "is analogous to a future tense marker" and that the conceptualiser using the modal engages in a "mental extrapolation of ongoing reality" (Langacker 1998:85).
Sweetser explained that “root modal meanings are extended to the epistemic domain precisely because we generally use the language of the external world to apply to the internal mental world, which is metaphorically structured as parallel to that external world”, (Sweetser, cited in Johnson 1987:50). She distinguishes between three main categories of root modals, which is similar to Bandler and Grinder’s classification. These were modals about ability (*can*), permission (*may*) and obligation (*must*). Thus their epistemic sense denotes the existence of perceived distinctions between probability, possibility and necessity, which again reflects Bandler and Grinder’s typology of modal operators. (1975)

What is interesting (and perhaps not insignificant) about modal operators is that they denote the mode, and therefore define the category in which a *future* activity is to be carried out. However metaphorical they may be, they introduce the dimension of time into the cognitive and linguistic domains. In cybernetics, the model makes no sense without the inclusion of time as an integral part of the operation of the system. Time may thus be both conceptual or actual.

Because modal operators define the mode in which a *future* event is to be carried out, they presuppose the existence of a present and a future as linked together. The sentence *I will do the ironing tonight* could not be uttered, (let alone conceived of) without both an awareness of the time frames of present and future, and the ability to produce or construct information that links the two. This is one of the most critical distinctions between a mechanistic world view, and that of cybernetics. For a system to be able to operate and maintain itself in time, *it must have access to information about future events that may not yet have happened*. As noted in Chapter 3, without such information, the TOTE process cannot be carried out.

Talmy (1985) proposes that force dynamics are “a major conceptual organising system”, (Talmy 1985:293). His view of this class of metaphorical structures is that they relate to how entities are
perceived as interacting with respect to force. Modal operators imply the action of a force; they can presuppose that someone is pushed from outside (you must) or that the agent experiences him or herself as the locus of control, or 'at cause', (you might) or that there is an insurmountable barrier to the agent's future outcome (you can't).

This model sheds some light on the possible metaphoric derivation of modal operators, yet is firmly embedded in a mechanistic paradigm with its reliance on force and energy as explanatory principles. If we take a more cybernetic approach, then modal operators could be thought of as the verbal analogues of some basic homeostatic processes. In cybernetics, the present state of a system is always being calibrated to possible future states. Are not modal operators, in their way, information about how to calibrate to that future outcome? They seem to be the carriers, as it were, of implied causality, introducing a temporal dimension which also categorises a future act.

This again raises the idea that intentionality, that is, an innate drive to work towards as yet unachieved goals, is one of the characteristics of all cybernetic systems. With the advent of cybernetics, it became impossible to explain behaviour without recourse to the explanatory principle of intentionality. Schaub (2001) suggests that all behaviours are driven by intentions which are stored as specific data structures. "An intention is a data structure comprising, besides the respective needs, one or more goals..." (Schaub 2001:199).

In 1946 the Macy organisation sponsored a conference on "Teleological Mechanisms". This was influential in bringing the notion of intentionality back into the spotlight as a working concept for the pioneers of cybernetic theory, (Heims 1977). As Wiener pointed out: "when we go duck shooting, the error which we try to minimise is not between the position of the gun and the actual position of the target, but that between the position of the gun and the anticipated (author's italics) position of the target." (Wiener 1962:113). Systems run on information, of which feedback is a central dynamic. In Wiener's
example we have an example of information being exchanged, as it were, between a situation in the present and a construct of an event in the future. This is another way of approaching the TOTE process.

Bandler and Grinder (1975) stressed the need to listen carefully for the modal operators that clients use when describing problem states because they include (by implication) the dimension of causality, and thus where the client perceives themselves to be on a metaphorical continuum between experiencing themselves to be ‘at cause’ or ‘at effect’. It is as if behind every modal operator there is a cause-effect pattern. A trivial example may serve as an illustration. If I were to say *I must do the ironing tonight* and you were to ask *what would happen if you didn’t?* then your question might uncover the causality behind the *must*, that I wish to look nice wearing a freshly ironed shirt. The cause-effect pattern then becomes clearer: the (perceived and anticipated) effect is to have this because it will feel nice, or I may wish to make a certain impression on others. When NLP is used for information gathering, then questioning the modal operators that people use so as to reveal the causal assumptions ‘behind’ them can uncover further significant information about the goals that are driving particular activities or thoughts.

5.4. Cause-effect thinking as basic conceptual processes.

Modal operators are not the only syntactic forms that reveal cause-effect thinking patterns. Bandler and Grinder identified cause-effect patterns as another category belonging to a class of language structures they originally referred to as distortions, (Bandler and Grinder 1975). These have been described in the previous chapter. Distortions or connections also include the categories of complex equivalences, mind reads and lost performatives. All of these have interesting ontological and epistemological implications.

It is considered useful to be able to recognise these patterns when interviewing or gathering information from others. They can reveal a
great deal about the patterns of thinking and beliefs that operate within other people’s inner worlds. My own preference is to think about distortions as containing connections. These inevitably make use of internal representations of locations or vectors in metaphorical space. The idea of space as a conceptually essential organising principle has been widely written about. Fauconnier (1994, 1997), Fauconnier and Turner (1998), Turner and Fauconnier (1998), Fauconnier and Turner 2002, and others have put forward similar views. Much of this work originated with the explorations of the roles of metaphor in human thinking by Lakoff and Johnson, (1980, 1999) and Johnson (1987).

Gregory Bateson has described causality as being both literal and metaphorical (Bateson 1972). Lakoff and Johnson however (1999), in their thorough exploration of the nature of causal thinking, propose that cause has two syntactic valence structures that correspond to the metaphors of causation as a forced movement, or as transfer of an effect to an affected entity. For Fauconnier, the reason for studying space configuration was that they “provide general answers to puzzles of language and meaning that are usually associated with sentence logic”. (Fauconnier 1997:66). My understanding of Bandler and Grinder’s model is that it places a greater emphasis on teasing out the different types of connections in people’s maps. According to this model, connections occur both in syntactical structures and conceptual maps.

In this sense Bandler and Grinder’s work is more in the tradition of Vygotsky, (1939) who not only proposed a relationship between language and thought, but also that “every thought tends to connect something with something else, to establish a relationship between two things” (Vygotsky1939:33). He also believed that the sense of words “merge into each other” (Vygotsky 1939:48), so that preceding words modify the meaning of those that follow. Using this model, it can be suggested that the syntactic linkages between words, and the abstractions that they generate, are indeed basic semantic
epistemological processes used to create meaning out of otherwise inchoate information. Bandler and Grinder’s views (1975A) were that causatives were basic modelling principles which did not need to be rational. "The important issue is not logic, but the modelling principles by which the client organises his experience", (Bandler and Grinder 1995A:19).

Fauconnier’s theories, however useful as explanatory devices, have the weakness that they are essentially metaphorical, and may not represent actual spaces to the subject. In my own data gathering, there were indications that space was in a real sense part of people’s internal representations. (I describe these processes further in my reflection on the texts of my interviews in Chapter 6,7,8 and 9). I found that both the spatial location of constructed ‘entities’, and the ‘perceived’ connections between different abstractions, were reported by my collaborators in the interviews. Fauconnier’s (1994) uses of the image of mental spaces seem to differ somewhat from my own findings, where people actually reported that their conceived images or internal representations appeared to them to occupy a location in actual space. Thus sometimes images were reported as experienced as near or far, or to the left or right of my respondents. These phenomena seem to show the qualities of primary experience, rather than those of metaphorical devices. There may be both literally perceived space as well as metaphorically conceived space in people’s conceptual maps. This is a distinction which is not apparent in Fauconnier’s model.

Cause-effect connections are believed to be deeply embedded in language. It is difficult not to conclude that they must have an epistemological function. To take my light hearted example, the cause effect pattern behind the original statement is: if I iron my shirt, then I will look nice, or to put it more simply, it can be represented by the algorithm: if x (at point t1 in time) then y (at point t2 in time). If the factor of time is taken out of the equation, then we have another kind of syntactical structure. Wearing a freshly ironed shirt means being
pleasing. This is what Bandler and Grinder refer to as a complex equivalence, which is represented by the simpler algorithm A=B. Here the factor of time has been eliminated from the construction. Such connections can be very typical of beliefs.

The idea that it is possible to map people’s ideas about causality has been explored by Weick (2001). There is a trend to map causal sequences in both individuals or organisations from documents or interviews. Cause maps may be simple linear representations of cause-effect thinking, or more complex, containing recursive loops. Weick suggests that cause maps are attractive because they lend substance to phenomenology, and are a useful way of analysing the social construction of reality. It has even been established that cause maps may change over time. I suggest that complex equivalence patterns may be just as useful to map, either in conjunction with cause maps, or on their own.

Identifying complex equivalences can thus add significant information to elucidating cause maps; both cause-effect and the linking of abstract entities in patterns of complex equivalences may be two sides of the same epistemological coin. It may be that both causal linkages and complex equivalence linkages are interdependent mapping processes. Beliefs that have the structures of complex equivalences may develop from an experience of cause and effect. Conversely, particular patterns of complex equivalences may themselves generate changes in the conceivser’s cause effect patterns.

This seemingly innate tendency to create connections as a way of making meaning is deeply embedded in language. Fauconnier and Turner (2002) call this conceptual ‘blending’; the bringing together of two hitherto unrelated ‘spaces’. I prefer to use the language of Bateson, Russell and Korzybsky, suggesting that we create connections between different conceptual entities, which may then also operate as different categories or logical types. Sometimes these connections can appear to be relatively simple, such as smoking
causes cancer. They can also be of considerable complexity, so that teasing out what and how people have connected in a kind of super-complex constructs can become a challenge. This was one of the ways in which I approached the transcripts of the Master Practitioners’ interviews, and forms the substance of Chapters 10 and 11.

The part of this inquiry, (which was carried out by my assistants, the two Master Practitioners), uncovers some interesting aspects where people appeared to have made dis-connections and re-connections in their own conceptual maps. This was evident when their experiences, and therefore their abstractions about themselves as learners, changed. One of the aspects we were interested in was the Practitioners’ conceptions of themselves as learners. I will present and review theses in chapter 10, because it illustrates how one may be able to track changes in people’s conceptual connections. This may yield insights into the nature of transformative changes.

5.5. Hidden connections and double binds

The complexities of connections also raises the issue about how we make judgements. Could connections also be involved there? Bandler and Grinder suggest the existence of a class of words which can only be produced after a judgement has been made. These are lost performatives; words which can only be conceptualised after a process of judgement has been carried out. So words such as ‘good’, ‘bad’, ‘evil’, ‘excellent’, belong in this category. How does the conceptualiser ‘know’ that something is good or bad? What has to happen before the word is even brought to mind?

Perhaps we store such judgements as categories of ‘good things’ and ‘bad things’. So there are hidden connections between the word and the category to which the individual has assigned events that have been judged. It may be impossible to categorise without making connections. Again, as with comparative deletions, in order to make any judgement, there has to have been a process of comparison, in
order to assign an event to a category. Does it fit into the category or not? Is it the same as the other members of the category or is it different? Such functions are impossible without the use of the epistemological primitive of comparison.

This idea has emerged through my reflections on Bateson’s ideas about language, categorisation and Russell and Whitehead’s theory of logical types, (Bateson 1972). My own perception of the way I analyse what may be the conceptual processes producing them is rather like dissecting a newly discovered creature. However, this is more of an epistemological dissection, to introduce a new metaphor. It is an exploration of some of the processes which may have been used in the creation of a lost performative, words that are the result of a judgement having been made.

Here the notion of scalarity, (which I described in Chapter 3) as a possibly essential conceptual device emerges again. It is as if there existed an invisible scale behind categories such as ‘good’ or ‘bad’. This is similar to what I believe happens before the production of a comparative deletion. However, lost performatives do not seem to be based on a sliding scale; rather they presuppose a comparison with what is perceived as a polar opposite. For instance, if something is conceived of as ‘good’, then this is a polar opposite to the concept ‘bad’, yet the two are linked. What are the differences between ‘ordinary’ categories which group members of a class together such as mammals, whales, food, and so on, and categories which include judgements about ideas and events? This is a question which has only arisen for me as the result of my data collecting and perusal of transcripts. These are mere reflections on what could be some of the processes that occur before the words themselves to come to the surface.

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2 In particular, the chapter entitled A Theory of Play and Fantasy, Bateson 1972 pp 177 – 193.
I suggest that connections may also be involved in lost performatives. If deletion, generalisation and making connections are some of the fundamental processes that occur in the production of language, (Bandler and Grinder 1995) then I suggest that what have been deleted from lost performatives are the ‘mental’ connections to the category and the scale which are part of the process of judging. Categorisation could be described as drawing an imaginary line around the information that is to be attended to, which also conveys information about what is not to be attended to, (Bateson 1972).

There is an overlap with Fauconnier’s (1997) model that what he metaphorically terms ‘blending’ occurs between different ‘mental spaces’, when people subjectively create their maps of their experiences. This seems to me to be another way of saying that people construct all sorts of complex connections. However, he and his co-workers do not seem to address the process of the making of judgements. Connecting may also be an integral part of the process of judging, and then of languaging the result. However, in the case of lost performatives, the connections appear to be deleted, and the lost performative generalised into a class. (Deletion is the inevitable consequence of any abstraction.) Thus, when someone says ‘this is bad’ he or she is assigning an event to a class, and possibly confusing logical types. A member of a class cannot be the class. Bateson’s view is that conceptually and metaphorically, a class operates as if it has a frame around a group of events within it. In his words:

“the messages enclosed within the imaginary line are defined as members of a class by virtue of their sharing common premises or mutual relevance. The frame itself thus becomes part of the premise system. Either ... the frame is involved in the evaluation of the messages which it contains, or the frame merely assists the mind in understanding the contained messages by reminding the thinker that these messages are mutually relevant and the messages outside the frame may be ignored” (Bateson 1972:188).
In order to assign events to the class 'good' it has again been necessary to use the process of comparison. With what? Perhaps with its polar opposite, 'bad'. Bateson, in suggesting that what a frame or category does conceptually is to draw attention to what is within, not to what is outside the frame. He suggests that this gives a figure-ground situation, where the frame which is operative determines the figure against the ground of what is excluded from perception, and beyond the frame. So in the category of lost performatives, there has not only been the assigning of an event to a category; paradoxically, the category itself bears a (deleted) relationship to its opposite, which is not consciously attended to, but which is nevertheless 'there', as the ground behind the figure at the fore.

Perhaps, the ability to conceive of opposites may be another essential epistemological process we use to make sense of value judgements. So good may be the figure against the ground of evil. Evil could be the figure delineated against the ground of 'good'. Thus we have the algorithm A is not B at the heart of the process of producing a lost performative. Yet paradoxically, A cannot be conceived of without B. A and B co-exist together at a deeper level (not in the Chomskyan sense); when lost performatives are languaged, it is as the result of some fundamental epistemological processes such as comparison, deletion, exclusion and the apprehension of polar opposites which act as precursors to the emergence of words.

Thus there may be connections within the conceptual processes leading to lost performatives, though they are complex and perhaps obscure. However, they may highlight some perhaps very fundamental epistemological processes such as the use of scales, the conception of opposites, categorisation, figure-ground relationships, deletion, and the formation of connections. These may be obvious, as with complex equivalents and causal relations, or obscured, as with lost performatives. I do not think that it is tilting at windmills to suggest that these are some of the basic processes which form bridges between map and territory. Perhaps I should let Bateson have
the last word in this context; "language bears to the objects which it
denotes a relationship comparable to that which a map bears to a
territory," (Bateson 1972:180). At the heart of this inquiry lies the
little explored interface between our internal representations, and
language, which is of a different logical type. In this inquiry, the two
appear to emerge as dynamically inter-related.

5.6. Mind reading, and other epistemological traps

Let us remember: we never deal with realities per se, but rather with
images of reality – that is, with interpretations. Watzlawick

...The mind, in apprehending, also experiences sensations which
properly speaking are qualities of the mind alone. These sensations
are projected by the mind so as to clothe appropriate bodies in
external nature. Thus the bodies are perceived as with the qualities
which in reality do not belong to them, qualities which in fact are
purely offsprings of the mind. A.N. Whitehead, quoted in Velmans

I offer the following example of a typical mind reading process. There
is an illuminating group exercise in a management training book
(Mullins 2002) which I have often used as a trainer. I include it here
because it illustrates the idea of mind reading. In this activity the
group is given the following story, then asked to judge a number of
statements about it as true, false or don't know, without being
allowed to refer back to the text.

A businessman had just turned off the lights in the store when a
man appeared and demanded money. The owner opened the
cash register. The contents of the cash register were scooped up,
and the man sped away. A member of the police force was
One of the statements that participants are asked to evaluate as true or false is: *After the man who demanded the money scooped up the contents of the cash register, he ran away.* (Mullins 2002:415). Surprisingly, many participants rate this statement as true. What seems to happen is that the people make the judgement from ‘reading’ the information that they have coded into their internal constructs, not from what was stated in the text. When the results of the exercise are discussed, people soon realise that what they are doing is to make judgements about an event by ‘reading’ as it were, their own internal representations of the story. They are thus evaluating what they believe are objective facts from the source of their own subjective responses, rather from the statement whose origins were external to them. This is the essence of mind reading. (Bandler and Grinder 1975, 1976). So here we evaluate what we know by making an internal representation, and filling in the missing gaps in our own constructs. We then believe this to be real, and a valid source of knowledge.

It is also possible to project this process on to others. One of the dangers that Bandler and Grinder (1975) draw attention to is when a person believes he or she ‘knows’ what another person is thinking. This process produces the typical meta-model pattern of mind reading. The statement *being late for our date means you don’t love me*’ is typical of a mind read. Connections again come into play. In this case, the conceiver makes a link between an external event (someone being late) and a subjective internal response. Such linkages are purely subjective, and yet another example of the power of connections to create meaning. A common linguistic marker that alerts one to a mind read is *I know that you...*, followed by some judgement or conclusion. Inevitably, there may also be cause-effect patterns buried deep within these structures.

Bandler and Grinder observed Milton Erickson use this process with patients. In the Ericksonian tradition, therapists use their own complex patterns of language in such a way that patients’ internal
constructs of painful events are altered. Grinder, Delozier and Bandler (1977) have written extensively on their analyses of transcripts of Erickson’s sessions with people, identifying the meta-model patterns that Erickson used. This example taken from Grinder, Delozier and Bandler (1977) of Erickson talking to a patient gives some indication of Erickson using mind reading.

I know from past experience that your blood pressure is changed, your pulse is changed and your eyelid reflex is changed. (Grinder, Delozier and Bandler 1977:175).

Thus there are essentially two kinds of mind reads; one in which the ‘reading’ is from the individual’s own cognitive constructs, and the other in which people come to believe that they ‘know’ what is happening in the mind of another.

It is tempting for the putative philosopher to propose that mind reading may be the most fundamental epistemological process of all. We know that we know because we refer continuously to our own internal maps, and mapping processes. Our maps become the vade mecum of knowledge about our knowledge. They are reflected in linguistic structures, and also influenced by them. We end up with an infuriatingly recursive piece of logic; that we know that we know because we make it up. Yet without this ability to construct our own maps, we would be lost in meaningless chaos. Bateson proposed that “the function of consciousness is the coupling between man and the homeostatic systems around him” (Bateson 1972:445); that we continually interact cybernetically with our environment. Whatever models of language are used, it seems that this paradox is an essential part of human information processing.

5.7. Presuppositions

Bandler and Grinder emphasised the presuppositional nature of language. A dictionary definition of presupposition indicates that it is
something that is assumed, or taken for granted. It is also thought to be a necessary antecedent to making sense. Presuppositions are considered to be a pre-requisite for sense making. Dilts (2000) has explained the term as something that is overtly expressed in the body of a statement, which must be supposed or accepted in order for the sentence or utterance to make sense. Thus for a statement to make any sense, the hearer or reader must first assume certain things. In the statement *the cat sat on the mat*, the existence of the entities *cat* and *mat* have to be assumed in order to process the information contained in the sentence. Similarly, the existence of a past, and the phenomenon of sitting also have to be presupposed. In other words, these assumptions are antecedent to the understanding of the sentence.

When Bandler and Grinder were identifying how Milton Erickson achieved the therapeutic effects that he did through his language patterns, one of the most influential devices he used were presuppositions. In *The Structure of Magic Volume I* they identify 29 different types of these.

Thus in order for a statement to be taken as 'true', something antecedent to it must also have been believed to be 'true'. Making sense of something in the present is based on sense-making that has gone on before. In terms of logical levels, presuppositions operate at a higher level of abstraction. This may then influence how an utterance or a text is decoded. Thus they also act in a similar way to categories or frameworks, which are thought to influence people's perception (Goldstone 2001). Presuppositions can also be powerful persuasive devices. For instance, asking a child at bedtime "do you want to put your pyjamas on now or after supper" presupposes that pyjamas will be put on. It is claimed that such patterns are more likely to elicit assent. This is a brief example of another dimension to the profoundly subjective nature of sense making through language,

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3 This can be downloaded from http://nlpuniversitypress.com/hmt12/PrPu20.html.
and of the ways in which language can be thought of as operating at many levels, both conscious and unconscious.

5.8. Conclusion

This chapter has reviewed the idea that there are different types of complex connections within people's conceptual architecture which are reflected in language structures. These both represent epistemological processes (which are agents in the creation of conceptual constructs) and, when languaged, influence the thinking of others. Such connections can be sought for when analysing texts, which is what I have done with the transcripts in Chapter 10, showing the changes that people underwent after attending the NLP course in Riyadh. Connections of various kinds seem to contribute to the emergence of meaning. They are also part of the process of abstraction; the higher abstract concepts will include connections of various kinds as part of the internal framework of the conceiver's maps. These in turn generate the presuppositions through which people make sense of statements and texts. Thus Bandler and Grinder's model of language is not merely a typology, it also includes some important underlying epistemological processes, which are as much about thought as they are about communication. These are some of the many aspects of information processing that I explore further, using the transcript of my interviews, in Chapters 6 – 10.

You talk to yourself too much. You’re not unique in that. Everyone of us does. We maintain our world with our inner dialogue. (Carlos Castaneda’s character Don Juan, quoted by Kornfield 2000:36).

Be prepared for the unexpected. You might find that you unearth other issues which were existing at a deeper level than the issue you originally decided to investigate. [...] Always be careful, however, not to let an inquiry get out of hand. Stay disciplined and concentrate on one area at a time. (McNiff et al 1996:40 – 41).

6.1. Introduction

This is the first of four chapters on my analyses and interpretations of the transcripts of my own interviews. I explained their background and design in chapter 2. Although the detail I now go into in reporting my findings may seem daunting, I have purposely approached this with care, because this approach, and the findings, may be new, and may therefore need careful exploration and description. In my own data collection, I focus on the internal representations and sub-modality changes that my interviewees reported on. I link changes in people’s internal representations to the language structures that I used in my interview schedule.

My new ‘microscope lens’ had revealed hitherto little known things. One of the difficulties of using this new method is that it has shown the topic of my inquiry to be far more complex than I had originally thought. Working from within a system’s perspective, it has been difficult to decide what to leave out. This was because many aspects emerged that I consider are part of the greater whole of the learning and sense making of people’s cognitive mapping processes. However, I believe that the role of the senses in conceptual mapping emerges from the data that I describe in the following four chapters.
As I explained in chapter 2, I interviewed six participants on my NLP course. I have changed their names so that they remain anonymous. I was most interested in eliciting people's experience of their own internal representations and sub-modality changes generated in response to my words. I have described Bandler and MacDonald's (1988) ideas on internal representations and sub-modalities in Chapter 3, where I suggest that they may be a vital but hitherto little explored aspect of people's internal constructs. The next four chapters are mainly about people's reports on their internal representations, and the changes in sub-modalities that appear to have been elicited by changes in the language structures that were used. Chapter 10 takes a different approach, as it describes my interpretation of interviews carried out by my assistants.

This chapter is mainly about my explorations of the effects of nominalisations (as distinct from the verb form) on people's construction of meaning at the levels of internal representations and sub-modalities. However, other features also came to light in these interviews, namely the role of words used at the beginning of my questions also played a role in how subsequent information was attended to by the conceiver.

Chapter 7 explores the role of modal operators and the effects of other small but seemingly powerful words on people's internal processes. Again, the focus is on changes in people's internal representations.

In Chapter 8, I offer my analysis of the transcripts with a focus on a number of factors that seemed to emerge from the interviews. These include the roles of the dimension of time and goal setting. They also indicate that people have the ability to use different time frames (past, present and future) as perceptual positions.

1 'Lucy', 'Edward', 'Ina', 'Kathleen', 'Steve' and 'Beatrice'.
In Chapter 9, I focus on responses to certain words, which seem to generate more specific internal responses in people. I also describe my attempts to explore the different perceptual filters of 'sameness' and 'difference'. Throughout the four chapters, I also refer to the role of people's internal dialogue, which appeared to emerge as an essential aid to the development of the conceivers' internal processing, and meaning making.

In Chapter 10 I use the transcripts of the Master Practitioners' interviews to explore some of the more abstract levels of people's constructs of learning, and propose that the style of teaching and communication may have profound effects on how people construct knowledge. This chapter uses Bandler and Grinder's meta-model as the main tool for my analysis of the transcripts.

The information from chapters 6 to 10, and my reflection on these findings, became the basis for the development of my hypothetical model of the specific processes involved in the construction of knowledge (and also learning). It suggests that there are a number of identifiable epistemological processes, used in the construction of people's models, which are mediated through language and communication.

Where I cite extracts from the transcripts, I use J. for my own words, and the pseudonyms for those of my interlocutors. Where there were pauses, I have indicated these thus: ..., and where I have left out parts of the transcripts, I have used (...).

6.2.1. Nominalising and de-nominalising.

In this section I begin to analyse the information from the transcripts of my interviews. The main focus in this chapter is on my attempts to explore the effects of nominalisations. I review my collaborators' answers to 5 different questions from my interview schedule. All of
these were initially intended to inquire into the effects of nominalisations. One of my original goals was to explore the internal processes associated with the nominalised and de-nominalised forms of words. A characteristic of our language and thinking is that as part of our conceptual strategies we appear to concretise what were originally processes. I have explored what I believe to be some of the theoretical background to these linguistic processes in Chapter 4.

In my own interview schedule, (whose design I described in chapter 2) there were five sets of linguistic constructions which deliberately contained both nominalisations and de-nominalisations. These were questions 3, 4, 9, 10 and 16.\(^2\) Each contained information that I wanted to present in both forms using different linguistic

\(^2\)Question 3

a) Can you be aware of how you relate to someone you value?

b) Can you think of a relationship with a person you value?

Question 4.

a) In the heart, the ventricles contract to pump blood around the body. The atria receive blood from the body. Closure of the valves at the bases of the main arteries prevent the backflow of blood on ventricular relaxation.

b) Your heart is a pump and (pause) receives blood from your body and (pause) pumps blood around your body. Imagine your ventricles contracting and (pause) squeezing blood into the main arteries so (pause) they need valves at their base that close so that (pause) blood isn't sucked back when the ventricle relaxes.

Question 9.

Think of something you might have done better. What are the differences between saying to you 'you did that wrong, and you did that wrongly'?

Question 10

a) Remember your childhood.

b) Remember being a child.

c) Remember yourself as a child.

Question 16.

a) It's important to understand communication.

b) It's important to understand communicating.
constructions. In the case of question 9, I explored using the adjective ‘wrong’ and then changed it to the adverb ‘wrongly’. For the sake of simplicity I will look at a set of responses, and then reflect on my findings at the end of this section.

6.2.2. Responses to Question 4, textbook language explored

With question 4 I had deliberately set out to explore the differences between the standard ‘medical text book’ language which is dissociated, and uses the third person, and the same kind of content phrased in the second person, with some of the contents denominalised. I had offered two statements. The first was more ‘text-book’, and contained a number of nominalisations. The second deliberately contained more verbs, (de-nominalisations) and used the second person. Some of the interviewees reported that their first response to my initial (more impersonal, third person) statement was that they were reminded of lessons, or textbooks in cardiology. Beatrice, for instance replied almost immediately that what came to her mind were still, flat, two dimensional colour pictures from a book:

Beatrice: It’s a text book, it’s the picture from our textbooks from our training as a nurse. It’s actually a colour picture. ... It’s colour pictures in the book.

1. So it’s flat, two dimensional?

3 In the heart the ventricles contract to pump blood around the body. The atria receive blood from the body. Closure of the valves at the bases of the main arteries prevent the back flow of blood on ventricular relaxation.

Your heart is a pump and receives blood from your body and pumps blood around your body. Imagine your ventricles contracting and squeezing blood into the main arteries so they need valves at their base that close, so that the blood isn’t sucked back when the ventricle relaxes.

4 By dissociated, I refer to a particular perceptual stance, in which the conceivers experience themselves as separate from the content of their conceptions.
Beatrice: Yeah, flat, still picture. I can actually see the book, I can see the whole thing, I can see the art that was involved in drawing it.

The second statement changed her internal representation from a still picture to a moving representation at the sub-modality level. This appeared to be a significant change. Her whole internal construction seemed to alter with my words. The language of the second statement contained more verbs, and I had deliberately tried to create a flow of information using my voice. On hearing this part, she commented that she experienced more movement:

Beatrice: It's the same picture from the book, but has movement in it, and the ventricles are contracting, and it's probably because I know the flow of the blood that I can see the movement.

Another person, Kathleen, reported a similar response, conceiving a static 'picture' in response to the first statement, and a moving one after the second. Her response to the first statement was:

Kathleen: Do I have the right picture? Thick black lines, that's it.

J. One picture?

Kathleen: Yeah.

J. And anything about what's on the picture?

Kathleen: Just little lines pointing to it. Like a diagram

J. It's like a diagram?

Kathleen: Thick black lines for the walls of the heart and little black lines pointing to the atria and ventricle.

J. Sort of textbook?
Kathleen: Yeah, sort of basic textbook.
She responded to the second statement more enthusiastically than to the first.

Kathleen: Yeah, it's a moving picture, colour, quite close to me actually, and in the picture there are different colours, the valves, the reds, the .... I can't see the blood going through the arteries but I can see the ventricles contracting, pumping.

Lucy, on the other hand, reported that her response to the first statement was to become aware of... Slides. I'm trying to... they're slides. It wasn't moving A bit of colour. I suppose I can put a little bit more into it being a nurse.... Definitely slides.

For Lucy, the second part evoked moving pictures. She told me that she had been aware of the 'ands' linking the various pieces of information together, which she thought had helped to produce the movement. She also commented on the effects that the word 'squeeze' had had on her. This word is one that Bandler and Grinder (1975) classify as a sensory predicate, that is, one likely to evoke a kinaesthetic response. In her case it seemed to transform the internal imagery from a series of stills to images in which there was movement.

Lucy: So yeah, much more of a picture. The word 'squeeze', it's easier to envision, it definitely was a moving picture.

J. So it was a movie?

5 The term 'kinaesthetic' is one used in NLP to denote any bodily sensation. This may range from interviewees being more aware of shifts in their bodily responses, to other sensations such as feeling heavy or light, warmer or colder, or with a sensation located at a particular point, or felt throughout. Kinaesthetic responses are considered to be an essential aspect of internal representations, which I have written about in chapter 3. My respondents often used the term kinaesthetic; it had become part of the language that we used in the NLP course to denote bodily sensations.
Lucy: It was a movie.

Edward was a thirty two year old Respiratory Technician in the hospital, and was also one of the Master Practitioners assisting me on the NLP course. He was one of the people with whom I discussed the design of my interviews. He gave me some useful feedback.

It is, I believe, indicated from Edward’s response that for him, the text-book language evoked text-book images. He volunteered what for me was one of the most significant pieces of information, which I have underlined below. Here he describes how he is aware that he is actively engaged in creating an internal representation, as it were in conjunction with my words, and his additional verbal reflections on them. Then, his internal representations seemed to take on a life of their own, so that it is as if, as he is describing his responses, his own internal words continue to access more information, so that as it builds up, it acquires more detail, colour and movement. It was as if that when he spoke of his own internal representations, they increased in detail and richness, stimulating more memories in the form of further internal representations.

Edward: Mh Mh (laugh) takes me back to my days of cardiology. Em, I have a picture of the heart with ... an aorta coming out of the ventricle...

J. Is it a still or a movie?

Edward: It's moving.

J. Mh Mh

Edward: I'm just filling in the bits as I go along. I'm constructing your dialogue against my map of my cardiology that I know. (My
emphasis, as this made me curious about what might be involved in people’s inner searches.)

J. OK. Yeah.

Edward: So I’m putting on the vena cava,

J. Yeah.

Edward: And just building it up, and now that it’s built now it starts getting its colour. (My underlining, as he is talking through how he is constructing the internal representation.) Interesting, the colour is as if you’re using colour Doppler. I don’t know if you know colour Doppler; towards the colour Doppler is always red, and away from the, eh...probe is always blue. From my days of doing cardiac echoes, so it’s actually being coded appropriately to cardiac echoes...

J. In your internal representation?

Edward: Yeah, uh huu.

He responded differently to the second half of the question. Instead of responding visually, his first response appeared to engage the kinaesthetic domain.

Edward: That’s very different. First of all I internally go to where my heart is, I can feel the sensation of blood moving through my vessels, then if I check my ventricle I can feel the blood moving out of my vessel... out of my ventricle, sorry, into the aorta, and when you mention the valves I can feel the sensation of re-gurge, the blood coming back and pushing against the valves.... Now that’s all the kinaesthetic, I can also see the picture (...), which is three D, no borders, movement.
In this case it was as if using more verbs, and the second person verb form, rather than the third person, may initially have led him to a kinaesthetic response, as he used the word ‘feel’ three times, as if he were attending more to his bodily sensations. He reported that he was not aware that there were any significant differences in his visual responses to each statement, though I did not probe further, except to note that his ‘pictures’ also had movement in them, as a response to my second set of statements.

Lucy, a 28 year old nurse responsible for Quality Control and teaching in the hospital, initially gave responses that were baffling, because they were different from those of the others, and thus a counter example. For her, it was the first statement that brought about vivid, colour coded moving pictures of a diagram of the heart. The second statement surprisingly produced a more ‘textbook’ representation.

*Lucy: (laughter) I think to make sense I had... first instructions you had were nice, the second instructions you gave me were more textbook. The language was unfamiliar yet it needed textbook picture, whereas the first language was un textbook like, it was understandable to a nurse or a layman, it was easy, the second one I needed a diagram for myself, it reminded me of school.*

One of the aspects that I have not focused much attention on is the role of meta-communication in human discourse. Factors such as tonality, modulation, rhythm, tempo and volume all have message value, (Watzlawick et al 1967). One possible explanation for Lucy’s different responses is that my own ‘meta-messages’ were influencing her. As non-verbal communication is considered to operate at a higher logical level than words, that too may influence how the message is to be decoded. It is considered to act as a categoriser of the verbal content. (Watzlawick et al 1967, Watzlawick 1978). The main aim of the research was exploring the power of words to teaching and learning. Although I did not explicitly inquire into the influence of meta-communication, its effects were unavoidable.
One of the most interesting responses to the second part of Question 4 was offered by Steve, a 26 year old male nurse, where he describes how his internal representation of his heart included information he had coded visually, auditorily and kinaesthetically. My first statement elicited a predominantly visual description, accompanied by some 'squelching sound', (sic) whereas the second statement produced this response.

Steve: No, there is blood coming back in but I can’t see it coming back in. there’s a noise again, but the noise is more like the lub dub of the heart, than the squelching sound, standing on oranges! (Laughter) I can feel my heart in my chest now, the rate is quicker than normal, I can actually feel the sensation in my arms of blood going through them.

I became curious to explore how people might experience the effects of their own internal words on these cognitive processes, and he seemed to be someone who was very aware of his own internal world, so I asked him: “So you talking about it has actually kind of changed the internal representation, so what you were saying was not just from what I was reading?” His reply then illustrated how his own dialogue developed the images in his introspections.

Steve: I think from what I was saying, the kinaesthetic became stronger, (my underlining) but the kinaesthetic did not change. The picture came first. As I was describing it the kinaesthetic became stronger. That’s exactly what happened. The auditory sounds... other than my internal dialogue was... became... the volume became greater.

Here he seemed to distinguish between the sounds of his own speech, and the other noises in his internal representation. So as he became aware of sounds, then of his own internal dialogue, as well as what he was saying to me, his internal model seemed to become amplified,
more intense. It was as if the internal dialogue was leading him to access more information. He also stated that he experienced a link between his act of describing internal events, and an increase in the intensity of the auditory and kinaesthetic components of his own responses. Lynch (1983) has reported that there is an increase in blood pressure in people when they talk, or even read aloud, as if speaking directly influenced their physiology. In the case of Steve, his own speech seems to have had a direct effect on the intensity of the activities of his internal sensory world. He also seemed to be able to track the effects of his own inner dialogue on the development of his internal representations. This could almost be described as introspecting introspection!

6.3. First words emerge as important.

With the first question\(^6\) that I had designed to investigate people’s responses to the nominalisation ‘relationship’ and the denominalised form ‘relate’, there were to be some surprising responses. Instead of reporting on the effects of the nominalisations, the transcripts seem to indicate that some people responded more to the words ‘aware’ and ‘think’ than they did to the nominalisation and de-nominalised form. This is indicated by Lucy’s response.

*Lucy*: I find that easier to think of, than being aware. Aware seemed to be more dissociated. Aware? (pause) so I think I would still get all the same feelings...

In my first interviews, it appeared that words such as ‘think’ and ‘aware’ may create particular mind sets rather as categories or metaphors do. These then influence how the information is constellated at the sub-modality levels. This is in keeping with

\(^6\) Question 3

a) Can you be aware of how you relate to someone you value?
b) Can you think of a relationship with a person you value?
Goldstone’s views about the influence of categories on perception, which I reviewed in Chapter 3. (Goldstone, R. 2001A). In this case, I found that, if we consider ‘think’ and ‘aware’ to represent two different frameworks, perhaps at a higher logical level than the rest of the sentence, then they seem to have altered the way in which my interlocutors paid attention to the rest of the sentence. This is in keeping with Robbie (2000) who has explored the idea that Bandler and Grinder’s metamodel of language structure needs fine tuning. He suggests that Pinker’s idea that phrases contain a word which acts as a ‘head’ (Pinker 1994) which gives a phrase its name and determines what it is about, needs to be considered. Perhaps how I used ‘think’ and ‘aware’ also caused people to respond to them as if they were ‘heads’. It is perhaps too soon to draw many generalisations about the effects of such words from such a small sample. Lucy’s response to ‘think’ and ‘be aware’ were interesting. These words were somehow considered by the interviewees as more significant than I had originally thought. They seemed to override the effects of the nominalisations, which were the class of words that I wanted to investigate.

The information about sub-modalities in the responses to this question was initially somewhat confused; if anything it was a lesson in the importance of the interviewer’s awareness of her own words. Erickson and Rossi (1989) stressed that the initially spoken words may create a ‘set’ (or framework, perhaps even a kind of category), which then determines the context to which subsequent information is assigned by the listener. It is as if how one asks someone to process information (requesting them to be aware or asking them to think about) appears to direct the internal search in different directions. In writing about the responses to these language structures, it is also interesting to note that ‘be aware’ and ‘think’ produce different effects. I illustrate this with extracts from the transcripts below.

It seemed that words such as ‘think’ and ‘aware’, when used as directives, may produce a different kind of internal search, and define
different ways in which the acquired information is to be configured. In retrospect I should have made clearer distinctions between whether I was exploring nominalisations, or the effects of asking people how to process and search.

Steve’s responses were interesting for a number of reasons. He was a practiced meditator, who claimed this made him more aware of his own processes. There appeared to be more detail in his responses to my questions. The next extract shows his internal search; he is commenting on his process of searching as well as his responses to my words. Of particular interest are his comments on his own internal dialogue, which I have underlined. In the second set of responses he repeats the word ‘relationship’, which I take somewhat hesitantly to indicate that he is configuring the information in noun form, though he then spontaneously uses the verb to continue his own internal search, which may have influenced the way the information was then experienced. Early on in the interviewing process I began to wonder about the role of internal dialogue in the internal search during the introspective process.

One of the most marked differences in my interview with Steve was the distinct sensory modalities which were evoked; the first directive that I gave him directed his attention to his kinaesthetic response (which may be his response to the word ‘awareness’) whereas in the second part he seemed to oscillate between awareness of the visual and the kinaesthetic aspects of his internal representations.

Sometimes people’s responses seemed initially to be difficult to describe; I suggest this may be because we lack an appropriate language to describe many of our introspections.

Here are some of Steve’s responses to the same set of requests. They also seem to indicate that he uses his internal dialogue to further and deepen his own introspection. I have underlined the parts of the extracts, which seem to me to illustrate this.
J. OK Fine. So number three is 'can you be aware of how you relate to someone you value?'

Steve: Yeah, that’s mainly a kinaesthetic, and the feeling is mainly in my chest and affects my breathing actually, I get a feeling first and then I get a picture of the person, and I hear their name, myself naming them. (...) It’s a still picture, it’s brightly coloured, the colours in the picture are bright anyway, that I have, the person’s wearing bright colours, but it’s a still picture, it’s clear, it’s framed, I can hear myself talking inside saying why I value the person, what this person means to me.... (pause) but it’s mainly kinaesthetic, is the strongest response...

J. OK So what happens if we kind of re-phrase that into ‘can you think of a relationship with a person you value’.

Steve. Em, yes but I don’t see, I have a sense of the relationship but I can’t see it relating, I can see a picture... but I can’t see it relating in it, I can’t see the interaction but I know there’s a relationship, and it’s good, it’s comfortable, the feelings again, it’s mainly kinaesthetic, the feelings are comfortable, ... I feel relaxed.... (pause) but I can’t be... it’s difficult to explain, but I’m going to the back of my head here there’s a kinaesthetic feeling like a ball again, a sphere, in this relationship. It’s sitting there. Give me a second to see what’s in there... again, I’ve got a different picture. It’s of me and the same person in this relationship... and it’s moving, it’s bright, it’s vivid, it’s actually the same scene... and there’s actually different scenes coming in and out, ... the feeling at the back of my head has gone actually.

What emerges from this part of the transcripts and the extracts from the transcripts of question 3 in particular, is that here we have more glimpses into the complex interactions between people’s internal dialogue, and the directions taken by their introspections, and therefore, it seems, their internal representations. Internal dialogue,
even in the responses to the most deceptively simple statements, was now emerging as a factor apparently able to direct searches, and influence how the information was then sorted and attended to. At the same time it seemed to echo and further develop my interlocutor’s internal dialogue. It also appeared to stimulate the creation of some rich and varied internal representations.

6.4. Reflections on the responses to question 10; memories of childhood.

The questions where I asked my collaborators to search internally for certain memories about their younger years yielded some unexpected responses. I chose to use the term ‘childhood’ because it is one of those nominalisations for which it has become impossible to return to the original verb, which could be something like ‘childing’, though that is ambiguous. I asked them to think about the differences in their responses between ‘being a child’ and ‘your childhood’. These produced marked alterations in the internal configurations of their sub-modalities. There were further differences when I asked people to remember themselves as ‘a child’.

Were I to carry out this type of questioning again, I would be more aware of the influence of first words on people’s initial internal responses. People reported significant shifts in how they processed and responded to my words in this question. Many differences in sub-modalities were reported. Some of the wordings elicited pleasant memories for some, for others, less pleasant. There were also marked shifts in people’s perceptual positions; sometimes my respondents could see themselves in the internal representations, at other times they were actually experiencing remembered events as if they were

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7. Remember your childhood.
2. Remember being a child.
3. Remember yourself as a child.
happening to them in the present. The first stance is typical of dissociation, where people experience themselves as being ‘on the outside’ of the events that are happening, or that they are remembering. Abascal et al (2001) describe this as taking the ‘witnessing stand’. When people are associated, on the other hand they appear to experience events as if they were actually happening to them in the present.

Beatrice’s responses illustrated just such a dramatic shift. To the first question she replied that she ‘sees’ lots of little pictures, which were associated with a good feeling. The second question produced a long silence and signs of distress. I wanted to avoid making any of my collaborators uncomfortable, so I quickly gave a few words of reassurance, and then moved on. Only when I was sure that she was no longer distressed did I continue with the interview. Here is the extract which I believe illustrates these shifts. What seemed interesting is that the first question elicited ‘loads of pictures’ whereas the second only produced one picture. This is a sub-modality distinction.

J. What happens if I say’ remember your childhood?’

Beatrice: (Pause.) Loads of pictures, pictures all over the place of my childhood.

J. OK. Lots of different pictures?

Beatrice: All different pictures.

J. All in front of you. Are you in the pictures, or looking at them, or...

Beatrice: I’m in some of them, yeah, looking at others, there a ... they’re not very clear, they’re like sort of fuzzy sort of pictures, they’re nice, and there’s a nice comfortable feeling as well.
J. And how is that different to 'remember being a child?'

Beatrice: Remember being a child is one picture with a border on it, it actually automatically goes into not a very nice situation...

J. Oh dear...

Beatrice: I'm a small person... (Here she showed signs of discomfort, so I reassured her, and we gently moved on to another topic).

A similar pattern was shown by Edward, who also responded to the first statement by seeing and feeling many different things, and who then, when asked to remember being a child, experienced a change in the number of pictures and a change in the feelings (kinaesthetics) associated with them.

Part of Edward’s response to the first statement illustrates the richness and complexities of people’s internal representations and sub-modalities. Again he gave me many insights into the dynamics of his own internal searches.

Edward: ...picture is a multitude of moving pictures ... smells, sounds, colours, fabulous, em, I have one picture at the front, again no borders, they’re all open... open pictures, so as I look around the pictures I just re build the map as I go round and interestingly I have all these pictures, and the one I have at the front is the one I always, em, sink back to when I think of childhood, it’s eh, very powerful, I can see 3D, movement, fabulous colour, in fact the colour is more fabulous than it would have been then, sounds, smells, even the sensation of breeze, so there’s the external kinaesthetic as well. Yeah, that’s a fabulous one.

His response to the second statement was different. Whereas the response to the first statement was attention to visual information, the second statement seemed to focus him on a kinaesthetic
response. There were also changes in his conceived spatial location of visual elements. The 'pictures' of his childhood have become more distant.

J. So how is it different when I say 'remember being a child?'

Edward: (Pause.) That's... primarily a kinaesthetic, with small pictures in the distance. Pictures are quite hard to focus on, emmm, very strong kinaesthetic.. em.

J. Located anywhere?

Edward: In my throat. Mmm. The pictures are wanting to be there but they’re just so far away... so far away... still with the kinaesthetic in my throat, ... quite a sad one... for some reason... mmmm..... (pauses) .

I was surprised when Kathleen also responded to the directive 'remember yourself as a child' with an internal representation associated with an unpleasant feeling.

Kathleen: (pause) ... (indistinct) I don’t hear, ... it’s smaller picture, black and white, and ... I’m in it but the K is not... It’s not a very pleasant K.8

Each of my interlocutors reported different responses to these three statements. The main differences were in their internal representations and sub-modalities. What was also of interest was that the words that were used to ask someone about their childhood actually produced a noticeable shift in their perceptual position in relation to the re-constructed memory. It was as if the events were categorised by the words that I used even before their searches were begun. Lucy’s responses indicated something of the complexities of

8 The term ‘K’ is an abbreviation for kinaesthetic, and was used on the course spontaneously by participants.
her internal searches, the changes in her sub-modalities as well as shifts in her perceptual position. At one point she is searching so intently that she forgets my words.

J. **What happens if I say 'Remember your childhood.'?**

Lucy: (laughter) My whole life flashed before me! Remember my childhood! Like I’m looking over here again, there’s a lot in it, like I can’t focus on any one thing.... Although everything is going around here at the moment, but there seems to be a little child at the top of the pictures, it’s in a circle, little things are happening, and there’s a picture at the top, and it’s me, as a child.

J. **OK. So let’s move on to the next one, and leave that one for the time being. ’Remember being a child.’**

Lucy: Yeah right I’m looking down now, also I’m going inside, remember being a child, I suppose it’s ... I’m trying to get a feeling of, it’s a kinaes..., Say that question again?

J. Remember being a child.

Lucy: yeah it’s a feeling that comes out, it elicits more than seeing a picture. Remember being a child. Yeah, yeah definitely. A big K.

J. **OK. And the picture is not...**

Lucy: the pic...? remember? It’s more of a K. **I was trying to search for that.** (I underline this sentence because she describes this process as a ‘search’.)

J. **OK. That’s fine.**

Lucy: A bit more of a K.
J. 'Remember yourself as a child'.

Lucy: Remember yourself as a child. Well *I'll be looking at myself*. A picture, it's moved down here, it's from the past obviously, my left hand side. ..... the picture's sort of started off...(tape ends, new side to tape begins).... *looking at myself as a kid there*...

In Steve's case there were similar processes; he moved from being associated to being dissociated, and he reported experiencing a shift in his internal representation from a pleasant to an unpleasant feeling.

J. OK. So what happens if I say 'remember being a child'?

Steve: (laughs) I'm associated into a picture where I'm playing with my friends... but I wouldn't know who the people are now... (laughs) erm... mind you the games were being very violent, but they're still pleasant if you like. I see the picture in front of me, not life sized, it's child life sized if you like. ... it's bright, I can hear noises, but it's unspecific noises, sort of shouting and roaring, laughing, erm, I've got a strong kinaesthetic sense on my left side here, it must be the trouble I found myself... I (laughs) I have a feeling of very much warmth or something here... (Here he pointed to the left side of his chest).

J. On the left side of your chest?

Steve: Actually it's here, still on my chest. Erm, ... it's funny. It's clear, it's vivid, *as if I'm a child*.

J. And what if I say 'remember yourself as a child'.

Steve: I see a different picture, and I'm dissociated from it, and ... it's ... pretty dull... it's pretty dull, the movement is pretty sluggish... it's black and white.
J. Are you in it? (This question was intended to establish whether he was associated or dissociated).

Steve: yeah, I am in it but I'm not... I’m dissociated ... [the feeling is] ... kind of in my chest, a heaviness again, my breathing is slower, and... the air going in and out are the same temperature, and that's cold, and it’s erm... it’s a strong yuck factor actually.

6.5. Reflections on the transcripts of question 17.

In this section I give an description and some initial reflections on the transcripts of question 17, which was again an attempt to present similar information in the nominalised and then denominalised form. This question came towards the end of the interview sessions. We had ranged over all sorts of topics, and perhaps my long suffering collaborators were getting tired of it all. However, some interesting responses emerged. It now seemed that particular words in a sentence set frames for people. There were, for instance, no differences between the responses to the two forms from Beatrice. I suspected at the time that she was attending so intensely to the richness of her internal processes that she did not ‘hear’ the denominalisation. Therefore I checked on this in my questioning, and found that this was the case. The word ‘important’ also seemed to set a frame for her internal search, as she repeated it. Perhaps the word ‘important’ overrode the effect of ‘communicating’. It may have categorised the information for her. Much of her reply is in the form of content, yet there are some aspects of her processes that emerge. Here is a part of the transcript.

J. ‘It’s important to understand communication.’

Beatrice: I agree.
J. What do you have to do before you agree?

Beatrice: Em, let me see, just seeing a breakdown in communication. I’ve seen a situation where there is a breakdown in communication. That happens every single day with me. And that is how, looking at that, that’s how I know that it’s important.

J. So there’s a picture out in front of you?

Beatrice: There’s a picture of me at work, surrounded by people who don’t have fluent English properly, and how our communication is never fluent, they never understand a word that comes out of my mouth, I can just see how we just don’t communicate very well. How they can’t understand me because I speak too fast, and I can’t understand them because they use all the wrong tenses. I can see us all at the desk, normally me in the middle of an argument

J. Movie? Still?

Beatrice: Movie.

J. Noise? Sounds?

Beatrice: Yes, loud loud sounds. I can just see my normal average working day.

J. And how is that different, or how might that be different if I were to say ‘it’s important to understand communicating.’?

Beatrice: There’s no difference, they’re still all there yacking away. It’s the same, I’m still in it, they’re still in it. We’re all still having our little communication breakdowns, which is leading me to the assumption that it is important to establish good communication. At this point I wonder whether she is still under the ‘influence’ of the first statement, so I ask her:
J. Ah, so you’ve just said something new, which is that you realise that it is important to establish good communication. Did that come off the first statement or the second statement?

Beatrice: The first statement.

Kathleen offered the following information on the effects of my voice tonality on her internal responses. It was never my intention to elicit the unfortunate image of a little liked teacher from her past. This is however what happened.

J. We’re nearly at the end. So if I were to say to you 'It’s important to understand communication.'?

Kathleen: (pause) like a schoolteacher.

J. Oh, sorry about that!

Kathleen: Like a schoolteacher, yeah, she’s sitting up. (End of side of tape. Continues to talk about her memories of this teacher sitting in front of her.)

J. OK. Was it the way I said it that elicited Sister Frances over there? (I ask this because she has pointed to her internal image’s spatial location.)

Kathleen: Yeah, you must have sounded....

J. The tonality?

Kathleen: Yeah. (At this point I decide to experiment with changing my tone of voice.)
J. So if I were to say something like (softer voice)’ it’s important to understand communication.’

Kathleen: That makes me want to know more.

J. OK. ...want to know more. And any pictures, any other responses?

Kathleen: I pictured you in the classroom.

J. Now you see me in the classroom?

Kathleen: Not Sister Frances. Poor Sister Frances! (laughter)

J. How is it different to ‘it’s important to understand communicating’?
(Here I deliberately asked her to focus on what was different, so as to elicit the contrasts between the two, by using ‘different’ as a suggestion that guided the internal search.)

Kathleen: (pause) It’s more flowing, movement, and there’s a picture there also...

J. Is it a moving picture?

Kathleen: Yeah.

Apart from the effects of my tone of voice, there were changes in her sub-modalities when communication was denominalised to communicating. I realised I could have asked for more detail from her, but the interview had now been almost an hour long, and we probably both felt tired. However, there seemed to be more movement in her denominalised version.
6.6. Doing it wrong, and doing it wrongly; adjectives and adverbs.

There were many words which had the effect of changing my interviewees' static internal representations to more flowing ones. Question 9 attempted to explore the effects of changing the adjective 'wrong' to the adverb 'wrongly'. I include my reflections on them in this section, as some of the responses appeared to have similar effects to those of denominalisations. Bandler and Grinder (1975) and Christina Hall (Hall 1989) propose that adjectives actually produce a form of nominalisation which they call a lesser nominalisation. For example, to say that someone was 'a lazy housewife' is said to link the adjective 'lazy' to the noun 'housewife' forming a structure that is essentially a nominalisation because it seems to be frozen in time, and also implies an identity, which is itself a nominalisation. (McWhirter 1992).

This was perhaps the most deceptively simple pair of linguistic constructions, as the two key words only differed by the addition of two letters. Yet the two versions, the first using an adjective, the second using its adverbial form, did not fail to produce different responses. It was summed up by Kathleen, who told me that "wrong is so negative, it couldn't have been any worse, whereas wrongly means it was ... (pause) slightly wrong." She went on to reflect on her responses to the two types of wording.

Kathleen: I did it wrong... it's a black and white still picture, and I've no choice in the matter, and that's it, but I did it wrongly, slightly over here, (indicating the imagined location of the first picture) it's still to the right of the first picture, and ... I've a very unpleasant feeling about the first picture, I've an unpleasant K, but this one is not

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9 Think of something you might have done better. What are the differences between saying to you 'you did that wrong, and you did that wrongly?'
10 Christina Hall, personal communication.
quite as strong, I still feel I have... there’s a choice there... (pointing to the location of the second picture).

J. OK, yeah.

Kathleen: that I have a choice to improve, if I did it wrong then that’s it. You know. (...) you did it wrongly gives me room to make it better. Wrongly notices some things that I’ve done wrongly so I can make that better, but with wrong I’m going to have to start all over again, I must have done a big boo boo.

Lucy’s responses, however, were the opposite to those of the others’.

Wrongly? Wrongly? You did that wrongly? The pictures moved up a little bit now. The picture’s moved ever so slightly, it’s given me a bit of a yuckier\textsuperscript{11} K. wrongly, wrongly? There’s not as much movement with the ‘wrongly’ for me. With the ‘wrong’, OK it’s past, let’s get on with it. It’s (wrongly) bringing it stuck more. I feel more stuck than I did with the wrong...

Steve gave detailed descriptions of his responses to the two forms. What was of interest were the bodily responses that he reported about the two different wordings.

The kinaesthetics of wrong and wrongly are different as well. They’re not particularly strong but there’s a sense of relaxation, I felt more relaxed, in the second part where I’m doing something wrongly, I don’t feel as tense as when I was told I did it wrong. And you don’t even know what it is! (Laughter)

He went on to describe the different responses to ‘wrong’ and ‘wrongly’ in these words.

\textsuperscript{11} The term ‘yucky’ became part of the slang on the course to denote an unpleasant experience.
Steve: OK. (long pause) well, if I did it wrong, then it seems that
that’s it. Stuck, whereas if I did something wrongly it gives me a
sense that there is some kind of possibility that I might be able to do
it better the next time. If you tell me I did something wrong, it was
wrong.

J. You’re looking up and your eyes are moving.

Steve: I’m looking at a picture and I can see... it’s one frame, even
though it’s not framed, and I see a process doing an exercise that I’m
doing where.... I can see two different outcomes, ... it doesn’t stop...
like underneath there’s a marker that says ‘wrong’ and then there’s
nothing in the future, there’s a sort of blankness, and I can see myself
doing something better. It’s wrong, and I’ve stopped, and I’m going
over, and I’ve done it wrongly, and I’m looking at what it is that I’m
doing wrong, and trying to change it. That’s what’s going on. (my
emphasis).

J. That’s interesting.

Steve: Strange actually, because I see myself three times, in the one
room as it were, it’s like it’s a hall. Strange!

J. There’s a lot of strange things in all of this.

Bateson (1972) distinguished between two kinds of information,
digital and analogue. Essentially, digital information consists of
discontinuous ‘bits’ whereas analogue information is in the form of a
continuum. Bateson further believed that analogic processing
preceded the digital mode. (This raises the possibility that analogic
communication may operate at a higher logical level, so that voice
tonality, for instance, is yet another transmitter of messages about
the category to which a speech act is to be assigned. (Watzlawick et
al 1967).
It appears that Steve’s responses to ‘wrong’ and ‘wrongly’ follow this pattern. The word ‘wrong’ in the context of giving feedback, produces what could be a ‘digital’ response, one where there is clear discontinuity, because the internal representation appears to come to a sudden stop. It is almost as if future possibilities had been expunged from his program. On the other hand, the response to ‘wrongly’ could be compared to an analogue process, as it appears to elicit the experience of continuing into future possibilities. The first one does not seem to imply the possibility of change, whereas the second one does. However, this was not the case for all these interviewees, so any generalisations of this kind must remain purely speculative. Nevertheless, the idea that some forms of words can increase or decrease the amount of choice available within an internally constructed (and perhaps problematic) situation is intriguing. Five of the six collaborators spontaneously volunteered the information that they sensed the critical difference between the two constructs to be the amount of choice available to them.

6.6. Conclusion.

Many aspects emerged from these reported guided introspections. Not least were the complexities of people’s individual internal worlds. There was much that was left out from the transcripts, and many other questions I could have asked. I was not expecting that small changes in syntax, for instance, would produce distinctive changes in the listeners’ perceptual positions, as if their responses to my language structures were moving them to different internal points of view. Although I had set out to explore nominalisations, people responded strongly to other words that I had used. It was usual for people to experience changes in their internal representations in response to changes in my wording.

The question this raises is ‘is it possible that language can, as it were, not only profoundly influence people’s cognitive maps, but also, in the
form of internal dialogue, move people around within a kind of internal space? (I explore this further in the next three chapters).

In this section, which began as an exploration into the effects of nominalisations at the level of internal representations, other insights emerged into the power of language to shape the listeners’ thinking. One of the most noticeable aspects for me, re-reading the transcripts, was the discovery that people’s own internal use of language furthered their own internal searches. It was as if these searches took on a life of their own. I believe that most of the processes that we explored, and which I have written about in this chapter, may possibly be beyond the conscious awareness of the individual.

Another factor that emerged was the extent to which many senses are used internally in the construction and re-construction of events and experiences that people have had. What is particularly interesting are the links between internal vision and feeling; changing a visual perspective seemed to produce changes in their kinaesthetic responses. This suggests a dynamic link between language, internal vision and people’s physiological responses, which for this kind of exploration one can only describe using the broad brush strokes of generalisations.

In the next chapters I continue to explore the role of the apparently ceaseless chatter of people’s internal dialogues. Bateson (1972) and Watzlawick et al (1967) argued that words were the digital aspect of language, whereas most non-verbal communication was analogue in form. Words are thus of a different logical type than the internal representations with which they interact.

Many of my co-researchers seemed to demonstrate the use of their own internal dialogue as an active continuation of the words they heard from me, and as a means for them to access further internal representations, further information from within themselves. This was a pattern, which was to reveal itself time and again in the rest of the
transcribed interviews. I describe these, and other aspects of people’s responses to words, which emerged from this part of my inquiry in the next three chapters.
Chapter 7. Modal Operators in Action, and Little Words that Mean a Lot.

"I ... interpret an epistemic modal as indicating the force dynamic experience of the conceptualizer (primarily the speaker) in working towards an augmented conception of reality, one that will incorporate a situation not yet assimilated to conceived reality either because it has not yet occurred or because the conceptualizer has not yet definitely learned about it." (Stamenov 1997:68).

"One cannot guess how a word functions. One has to look at its use and learn from that". (Wittgenstein, in Kenny, A (Ed) 1994:116).

7.1. Introduction

In the last chapter, one of the factors to emerge from my analysis of the transcripts was the complexity of people’s responses. These occurred at both the levels of internal representations and sub-modalities. In this chapter I report on some of the ways in which my interlocutors responded to other kinds of words. These included the class of modal operators. I described some of the theoretical aspects of these in Chapter 5. I also report on my explorations of the effects of other language structures, such as the differences between adverbs and adjectives. I also include some of my interviewees’ responses to other small words, such as but, feel, and yet.

I describe some of my own insights into people’s responses, and the complexities that continued to appear. Internal representations were emerging as a part of people’s conceptual processes, yet they also appeared to be complex, and sometimes frustratingly evanescent. I continue to describe what I believe is more about the complexities of their dynamics in this chapter, as well as chapters 8 and 9.
7.2. Responses to modal operators

My approach to inquiring into the effects of modal operators\textsuperscript{1} was to ask each participant to think of a relatively ordinary activity that they would carry out in the near future, and then ask them to obtain an internal representation of it which they could report on to me. I then requested them to respond \textit{sequentially} to six different statements, such as ‘you will do it, you can do it, you might do it,’ and so on. I guided them to focus specifically on what sub-modality changes (if any) occurred in response to each of the statements, and to report on them. I was curious to find out the effects of changing the modal operator, (and by implication, the mode in which the constructed future activity would be approached) whilst keeping the same goal in mind. Again, my main focus was on how these affected the sub-modalities of people’s original internal representation.

The first finding was that it was rare for a change in modal operators not to produce some alterations in the conceivers’ sub-modalities of the internal representations of the constructed goal. Aspects such as movement, clarity, colour, location and choice seemed to be among the most critical factors among the responses produced in people by various modal operators.

More information emerged on the frequency and use of internal dialogue. My collaborators seemed to use their own internal dialogue as part of their responses to my words. What they were saying to themselves ‘on the inside’ as a response to my statements seemed to play a role in catalysing sometimes quite dramatic changes in their own internal representations, thus generating what is known as trans-derivational searches, (Grinder, Delozier and Bandler 1977). These

\textsuperscript{1}Think of something quite ordinary like cleaning your teeth, or anything of that kind, something that you do every day, that you're going to do in the near future, and get the I.R. (Internal representation). And what happens to your response when I say you will do it you might do it you can't do it you should do it you can do it you could do it.
refer to the process of a kind of internal sorting and searching for meaning. It is as if the conceiver were seeking an answer to a question, almost as an uncontrollable process, (Grinder et al. 1977).

What follows is a report of some of the ways in which people’s responses changed as the result of hearing similar phrases containing different modal operators. Often they appeared to produce movement in the conceiver’s perceived images. Changes in modal operators either altered the rate at which the internal ‘film’ ran, or altered the location of the internal representation. These are amongst the many sub-modality changes described by Bandler and MacDonald (1988). For one of my collaborators, changing the modal operators actually changed the speed of movement of the internal representation. This is shown in the following segment of transcript.

J. What happens to your response if I say ‘you will do it’?

Beatrice: I think the K² is changing. Because ... it’s more of a command, I see it as a command, and the picture is slower, it’s like there’s not much enthusiasm... there’s no other changes in the colour or any things like that, it’s just the movement is slowed down.

J. OK. And if I said you might do it?

Beatrice. No big change.

J. Not a big change. OK. What if I said you can’t do it?

Beatrice. It’s a total change. The picture has stopped, the whole thing has...

J. ...sort of frozen?

² This is an abbreviation, which the whole class developed for the word kinaesthetic.
Beatrice: Stopped, and disassociation.

J. And if I say 'you can do it'?

Beatrice: It’s speeded up.

Other collaborators also reported sub-modality changes in other sensory modalities. Edward, for instance, experienced the main differences between the modal operators I used with him as predominantly occurring in his kinaesthetic domain. His responses were more also complex. At one level he appeared to be clarifying and analysing what I was saying, and at another level paying attention to the sub-modality changes that occurred in his own internal world. This part of the transcript gave me some more interesting glimpses into the roles of internal dialogue in his processes of generating internal representations.

J. OK. 'You might do it'.

Edward: Mmmhh, gives me an option. Perhaps I don’t want to be bothered, so I’ll leave it. Again it’s a kinaesthetic, the picture is... ah yeah... the picture is fuzzy.... Blurry, it’s still a no frame, it’s still an open picture, I’m still associated ehh, but it’s a blurry picture.

Later he responded to the modal operator ‘can’t’ in the following way.

J. Mh Mh... And if I say, as you think about the thing that you’re going to do, if I say 'you can’t do it'.

Edward: It’s just a kinaesthetic.

Later on in the transcripts he again reaffirms that his primary response to my statement was kinaesthetic.

J. (...). And if I were to say 'you can do it'?
Edward: Again it's just another ... it's just a laugh, it's a kinaesthetic with a laugh, of course I can do it!

At one point there were changes in his visual sub-modalities. Interestingly, my modal operators had the effect of sometimes driving his attention to externals, for instance to what I was actually saying, and how I was saying it. Others produced a more internal search. It appears that we have two modes of attention, one where our awareness is on information coming from the external world, and the other when we turn inwards, as it were, to pay attention to our own thoughts. To the suggestion 'you could do it', his response was:

J. (...) and if I say 'You could do it'?

Edward: That's much gentler. The kinaesthetic is more relaxed, it's em.... The external auditory effect is one of support, so it's my choice... the internal, the picture is soft, still clear, but soft.

J. When you say soft, does that mean the colours are slightly faded.

Edward: The colours, yeah, it's gone more pastel. I mean I wasn't aware of the colours before, but I would say now there must have been colours before because it's become a very soft gentle picture which to me means more pastelly colours.... Softer lighting on the picture, it was a bright intense picture, but it's very soft now, ehm, much more relaxing em, more pleasant, and more acceptable, the external auditory is a more acceptable part ... becomes part of the picture.

J. So with 'you should do it' you were aware of the external?

Edward: I'm aware of the externals.

J. With 'you could do it...?'
Edward: Becomes more internal.

Some modal operators presuppose choice, whilst others, such as 'will', 'can’t' and 'must' are modal operators of necessity, and imply a lack of choice. This was borne out by some of my respondents. For Edward, the choice that was presupposed by the modal operator 'might' appeared to be the critical factor that altered his visual sub-modalities in the previous extract from the transcripts. At one point he said: 'yeah, it’s actually a nicer picture because of the choice you give me'.

Lucy showed a similar response. In her case it appeared as if the modal operator 'will' acted as a trigger for recalling vivid memories. Perhaps it was a response to my own tone of voice. Here an image of an unfortunate teacher was linked to her feelings of a lack of choice in the context she accessed. She was also very aware of the presence or absence of perceived choice.

Lucy: ‘You will!’ Schoolmarm! You will! It’s like you’ve got no choices, it’s definitely repulsed. School, out there, looking at her, sort of thing, definitely internal, there’s a visual...

J. And are you back at school?

Lucy: I saw a schoolmarm! (Laughter) Unless it’s a movie that I’ve seen. You know, you will do this, and you won’t do that! Being told what to do. Like I’m not a child anymore, I’ll decide what to do and when I do it.

J. Yeah OK. And what’s happened to the picture of the thing that you were going to do?

Lucy: It definitely didn’t seem like it turned me off it.

J. What happened to the picture?
Lucy: Well the 'will' sort of became very big, and the picture went quite.... Like I was pushing away. Well I won't now. (laughs) I, a little bitch! Like ... yeah, I would have pushed it aside.

The reaction to the modal operator 'might' was distinctly different.

J. OK. OK. What happens if I say 'you might do it'?

Lucy: Well it's definitely more appealing. It gives me the option now. And, em, the picture, I can see myself much more clearly now actually, I can see myself much more clearly doing it. I don't have the repulsion that I did like when you said 'you will'. And I don't see any other pictures, just me doing it, yeah, it's much more pleasant.

What emerged from reading these transcripts, and then writing about them, was that the use of such words also seemed to transmit information about causality, especially in relation to how the individuals placed themselves in terms of what Bar-Tal (1984) described as the locus of control. This may be perceived as either internal to them, or as coming from an external source. These appear to be subjective standpoints which may also influence the conceiver's perception of the performance of a future task.

7.3. Internal dialogue and causal assumptions

By this time in the interviewing process I had become intrigued by the activities of people's internal dialogue. It was obvious that many of the responses involved this. What could its role be in the construction of meaning? So I sometimes questioned my interlocutors further about what they were saying to themselves 'on the inside'. In the next extract, it is possible to track the effects of Lucy's internal dialogue in response to my statement, and how her own internal words (as it were, carrying on from my own 'externally' originating words) furthers the development of her internal responses. In effect,
she continues the process of verbalising through her own internal dialogue, in which the modal operators that she uses may also have played a critical role.

J. And if I were to say ‘you can’t do it’?

Lucy: I would probably say, well I am, so internal dialogue, internal dialogue... like I probably doubt myself and then say well I can, so I will now!

J. OK What did you do before you doubted yourself?

Lucy: I probably (indistinct) I can’t? I mean it’s a simple thing like you said, it’s like I cant? What do you mean I can’t? Course I can! (My emphasis).

What is also interesting about Lucy’s responses is that it is as if her internal dialogue had the result of shifting her perceptual positions. She appeared to move from being ‘at effect’, that is, having a sense that she has little choice, and experiencing the locus of control as external, to being ‘at cause’, a position where she experiences choice, and therefore some control over what she is intending to do. Here the locus of control would be described as internal. Bar-Tal (1984) has explored pupils’ perceptions of causality, and its importance to the success or otherwise of their learning processes. In Lucy’s case, she apparently places herself back in the causal position through her own internal dialogue. A similar shift occurred with Edward. For him, having an option seemed to be critical to how he then perceived his goals. Lucy’s responses to the phrase containing the word ‘might’ were interesting. ‘Might’ is a modal operator of possibility, often implying that causality could be experienced as coming from within, and presupposes the existence of choice.

Lucy: Well it’s definitely more appealing. It gives me the option now. And em, the picture, I can see myself much more clearly now
actually, I can see myself much more clearly doing it. I don’t have the repulsion that I did like when you said ‘you will’. And I don’t see any other pictures, just me doing it, yeah, it’s much more pleasant.

J. Internal dialogue?

Lucy: Yeah, there was internal dialogue as well, it’s like OK! Cool, you know sort of thing. Internal picture as well. Yeah.

She also reported that there were different locations for the internal pictures associated with ‘can’ and ‘can’t’. Although the tape was indistinct, I made a note of this at the time.

Lucy: The picture’s moved, it’s on my right now, em, ....(different locations for picture of ‘can’ and ‘can’t’.... Tap indistinct).

Beatrice also reported a strong response to the modal operator ‘will’. This is classified as a modal operator of necessity, (Hall C. 1989) and by implication removes the conceiver from experiencing being ‘at cause’ to perceiving control as operating from the external environment.

Steve’s responses also show how modal operators influenced his experience of causality. To the phrase including the word ‘will’ he responds with information about his internal dialogue, which reinforces his sense of being in charge.

Steve: (Pause) em, .... Nothing changes internally, nothing changes because I know I will do it anyway.

J. Were you saying anything to yourself on the inside?

Steve: Yeah, I was asking myself ‘why wouldn’t you do it anyway, you are going to do it anyway’?
J. It's interesting because you were actually looking from side to side horizontally, which is supposed to be the auditory accessing cues, which made me ask that question.

His next response illustrates what might be a kind of scanning of information between his present state and the desired outcome.

Steve: I was going... I was future pacing, and going back, to the future again, going auditory, because that which I'm going to do involves something ... involves the hearing, involves hearing, and I could hear the sounds that it makes as well as talking to myself. I need to get this thing! (laughter).

However, the use of the word 'might' had a different effect on him. Instead of giving him options, it seems to weaken his resolve.

J. So what happens if I say you might do it.

Steve: Emm, (pause) Now it seems vague, ...

J. What seems vague, the picture or the sound?

Steve: The picture. The sound doesn't exist. ... it's just... I don't have... I don't have the same sense of, of doing it, or wanting to do it.

It seemed that for Steve, the modal operators that implied certainty exerted a more powerful influence on his conceptual world than those which only suggested a possibility. With Steve, his internal dialogue appeared to modify the original effects of the modal operators he heard from me. It is tempting to suggest that what actually changed was his experience of the locus of the cause. When he re-phrased what I had said internally, he seemed to be moving himself into a more causal position, where there was a greater degree of certainty.

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3. He later told me that his goal was to improve his guitar playing.
that the outcome would be achieved under his own volition. *(I need to get this thing!)*

Kathleen also had a strong response to my phrase ‘you will do it’. She replied ‘I don’t want to do it now’. There is a sense in which this could also be interpreted as her regaining her own control over a constructed situation. Modal operators therefore reveal another dimension to their complex effects; they seem to have the ability to locate the individual conceiver somewhere on a spectrum between having ‘internal’ choice about a future activity, or being strongly influenced by forces perceived as external to them.

### 7.4. The phenomenon of location in internal representations.

One of the sub-modality changes reported by Bandler and MacDonald (1988) was that people experienced a shift in the location of their ‘pictures’, almost as if internal visualisation was projected somewhere into outside space. Sometimes this was linked to a change in the size of the picture. This phenomenon was reported by Kathleen, who told me that changing modal operators resulted in a shift in the ‘external’ location of the internal picture. I cannot attempt to provide any explanation for it, except to say that it seems to me to be yet another internal dimension that is part of how we code and process information. We seem to use space to ‘locate’ our images. During my interviews I observed my interlocutors and made notes. I paid particular attention to where people looked when they were accessing their internal representations, and describing them to me. There was frequently a marked change in the direction in which people gazed, as if their internal pictures could be scrutinised as if they were external to themselves. In the following extract, Kathleen described how the use of different modal operators produced changes in the location, colour and size of the visual aspects of her internal representations. These changes also affected her kinaesthetically. In the following extract, it is possible to track these changes.
J. And how is that different when I say 'you might do it'?

Kathleen: Movement and colour back again now.

J. Nearer, farther?

Kathleen: A little bit closer. And it's bigger...

J. Closer and bigger. What happens if I say 'you can't do it'?

(laughter)

Kathleen: (Pause) it actually hasn't changed from the 'might'.

J. Because you're just not processing 'can't'?

Kathleen: No. (laughter).

J. Good good. What happens if I say 'you should do it'?

Kathleen: A little bit further away, and a little bit smaller, though there's still movement there.

J. What kind of kinaesthetic response do you get to 'you should do it'?

Kathleen: (Pause). It's a warm feeling, it's here, there's a warm feeling here, a warm soft feeling.

J. OK. And now, 'you can do it'.

Kathleen: yeah. ... It's a much bigger picture.

7.5. Modal operators and motivation.

For one of my collaborators (Ina), the sequence of modal operators, (which I had not really thought about, having originally written them
down just as they came to me) became linked in a meaningful developing sequence for her. They generated a series of internal representations in which her conceived actions were developed, and then nearly completed. I give the extract here in its entirety, as it shows how each successive modal operator produced a shift in Ina’s responses that were in turn linked to significant changes in her internal representations. It was as if the modal operators were directly developing her construction of a future activity. In addition, the sequence of modal operators also seemed to develop further her own perceptions of a course of action she had been thinking about.

I have underlined the modal operators in the following extract for greater clarity. The next extract almost speaks for itself. I have however, added my own comments in parentheses.

J. So can you think of something quite ordinary, you know, like cleaning your teeth, something that you’re going to do in the near future, sort of something fairly pedestrian? Now, what happens if I say 'you will do it'?

Ina: I agree. Can do, will do. (Her first response is that she becomes aware of her internal dialogue.)

J. Is that an internal dialogue?

Ina: Yeah.

J. And do you have a picture of what you’re going to do?

Ina: I’m actually doing it. (Here she apparently associates into the internal representation.)

J. You’re actually doing it. OK. Yeah. So you’re doing it, and you’re saying to yourself...
Ina: You can do it. (Here it appears that the internal dialogue accompanied the images, and perhaps influenced their development.)

J. So back to the picture of what it is you’re going to do, or the internal representation of it. What happens if I say ‘you might do it’?

Ina: You’ve frozen my picture. (her bleep goes off) I’m still. (Here it seemed that the movement that she experienced in the visual dimension stopped).

J. Do you want to answer your bleep?

Ina: Yes please. (Pause, and the microphone is disconnected for a short time). It stopped the movement, whereas when I said I will I was actually performing, might do has actually frozen me.

J. So what happens if I say ‘you can’t do it’?

Ina: Exit picture.

J. You mean the picture’s gone?

Ina: No, just me, out. I was there, and now I'm looking at what I'm supposed to have done. (This implies that she has changed her perceptual position).

J. OK. And what happens if I say you should do it.

Ina: I’ve stepped back in the picture, I’m aware of my surroundings. (Here she refers to her internally constructed surroundings, rather than those of the interview room.)

J. Is the picture all round you?
Ina: yeah. I've stepped back into the picture and I'm looking around, and I'm basically saying to myself 'well have a go, see what happens, have a go, see what happens'. (Here the internal dialogue comes to the fore, and seems to catalyse the further build up of her motivation.)

J. Oh! 'You can do it'?

Ina: I'm there, I'm actually, I'm swinging, I'm doing it, I'm looking around, looking at what I'm supposed to be doing, and I'm ready. Yeah. (Now she appears to be engaging internally in the activity, and aware of the motor movements necessary for the task.)

J. Has the picture changed in any ways?

Ina: Yeah, there's movement, there's sound, I'm looking at everything around me, and I'm saying to myself 'come on then girl, keep going'. (She now seems even more aware of her constructed movement, sounds, internal dialogue as well as vision as she begins to conceive of the goal.)

J. And is it more so than in 'you should do it'?

Ina: Yeah, in 'should, It was silent, in 'I can' there's sound I can hear what's going on around me. I think 'I should' is more private, I'm like 'I'm going to give it a go!' (Now it appears that she 'switches off' her awareness of sound coming from the external world, and has a greater awareness of her own internal dialogue, as her sense of movement towards the goal continues to develop.)

J. Yeah. So with the 'should' you've got an internal dialogue, and the outside is silent?

Ina: Is silent.
J. And what happens if I say ‘you could do it?’

Ina: Yeah, it re-enforces my ‘I can’. It’s just given me,... go ahead... more. I have support by somebody saying I could. ‘Go on, you could do it, you could do it. I’m actually yeah, my coaches.... (Now there seem to be sounds coming from other people involved in the activity, encouraging her. She pays attention to these newly appeared internal images.)

J. So you’re touching your left shoulder. Is that as if somebody’s kind of encouraging you?

Ina: Yeah, yeah.

J. So, picture?

Ina: Yeah. Yeah, ‘I could’ is me actually going out to the dug out, (indistinct) and I’m getting a ‘could’ and ‘I can’ I’m actually at the batting, right there, on my own, but still aware, but ‘I could’ is like I have somebody on my back. (Here she describes how the different modal operators develop her internal representations of the goal.)

J. Encouraging you! OK. This is content free but I’m quite interested to know what it was. Is it a sport or something?

Ina: Yes it was, it was my,... soft ball.

J. Oh OK.

Ina: You sort of like freeze when you get to the batting mount, so it depends who sends you out. If they say ‘you will do it, you could do it or you can do it...’. Brings back memories.

J. So modal operators might actually be quite...
Ina: *Helps me play better*... (Both of us suddenly seem to realise that modal operators might be important to motivating.)

J. *...powerful in terms of your performance?*

Ina: That’s what I say when I’m getting ready to hit. *‘I will, I will I will’*. With the *‘I could’* is just an extra support for me. Somebody actually has faith in me to say, go on you *can* do it.

J. Just as a matter of interest, as I went through these modal operators, was there anything like stacking an anchor going on?*¹* (I am curious to know if the sequence of modal operators have somehow built on each other.)

Ina: *yeah, I can, and I will, and you could ... it’s just that I’m out here...*

J. *Did they all sort of influence each other?*

Ina: With the *‘I will’* then you’ve told me, and I *will* do it, so I’ve already future done it, *‘I will do it’, and *‘I can’* has put me there, *‘I can do it’, I’m there. And *‘could’, somebody’s just reinforcing me, bringing me forward.*

J. *So with the... it seems to me, and again I’m not sure, I’m really just suggesting something, trying not to mind read, ... it seems to me that you’ve developed like an... attraction.*

Ina: *yeah, a pull, the further down we’ve gone the more the pull has developed [...] I feel safe, I feel great, I feel like somebody actually believes that I can do it.* (Here the sequence of modal operators seems to have amplified her belief in herself. She implies she has a

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¹ Stack ing anchors is an NLP term describing a process where a number of stimulus-response bonds are linked together and built up to produce a stronger effect than would just one stimulus alone. (McWhirter 1992).
motivation strategy where she depends on external support and encouragement.)

J. OK

This was one of the most surprising interviews; I had not expected that my simple phrases would be so sequentially influential in the development of her internal constructs about completing a future task. It is also apparent that her own internal dialogue played a role in helping her to make sense of my input.

Modal operators are small words, rarely more than one syllable long. Yet they seem to exert a considerable power over my interlocutors’ perceptions of their subjective and complex internal events. It is tempting to conclude that they play a vital role in the representation of future events, and also exert a modifying influence which may be unique to each individual. Certainly, no two individuals reported the same response to different phrases containing modal operators. So at one level, we can suggest that modal operators play a part in the creative process of coding future events, yet in another, more specific domain, each individual has unique, idiosyncratic responses to their own menu of these interesting little words.

Modal operators are coherent with the cybernetic view, because they imply the existence of an activity in the future, thus bringing in the factor of time. They also carry information about the dimensions of causality, which is implied in the system’s approach to a future event. This is evident from their influence on people’s experience of choice within the framework of a specific modal operator. They certainly appeared to be the most powerful class of words in the sentence, perhaps fulfilling the role of what Pinker (1994) calls the ‘head’ word. Pinker proposed that in order to be able to make sense of a sentence,
people needed to have a ‘parser’\(^5\) whose role was to decode the sentence. One of the first things that the parser needed to be able to do was to identify the head word, which then communicates the context for the classification of the rest of the words in a phrase or sentence. Pinker described this as a branching algorithm, with the ‘head word’ occupying the ‘top’ position, and other syntactical structures branching downwards from it. This is distinct from grammar, which is “a mere code or protocol, a static database specifying what kinds of sounds correspond to what kinds of meanings in a particular language,” (Pinker 1994:197).

There is some correspondence between people’s responses to the modal operators, (which seemed to play a leading role in the construction of the internal representation,) and the idea that there is some sort of ‘head’ word which, when a sentence is heard or read, acts as a focal point around which the rest of the meaning is constructed. If we use the Batesonian idea of logical levels, then it is as if the modal operator, because it sets context, may operate at a higher logical level than the rest of the information in the statement, and influence how meaning is made at the level of internal representations.

This was indicated by Beatrice’s initial response to question 5. This was intended to explore the effects of the word ‘but’. However, her strongest response was to the word ‘need’, which is a modal operator of necessity. In this case it clearly acted as what Pinker would have described as a ‘head’ word, creating the context for the decoding of the rest of the sentence, and overriding the effects of the word ‘but’ which with all my other interlocutors was the word which had the most influence on the meaning that they constructed at the level of internal representations.

\(^5\) “The mental program that analyses sentence construction during language comprehension”, (Pinker 1994:197).
J. OK. Next question. What’s your response, again in terms of internal representations and so on, if I were to say to you ‘you are good at NLP, but you need to work on your rapport skills’.

Beatrice: Automatically think of rapport skills, that’s the part of the sentence that I would focus on.

J. OK. And if I said you need to work on your rapport skills but you are good at NLP.

Beatrice: Rapport skills.

J. Still rapport skills?

Beatrice: That little word ‘need’...?

J. OK. So that word need is kind of...

Beatrice: Yeah, I find I don’t react well to that modal operator!

No one, as far as my searches have been able to establish, has ever taken this approach to the investigation of the phenomenology of the causal relationships between language and thought. What emerged was a phenomenon of complex and dynamic relationships between words and the thoughts that they engender. I am only scratching the surface of this level of subjective experience. I can only offer the very generalised conclusion that some words seem to have more power than others at setting the directions for the ways in which conceivers may search for, and construct meaning.

7.6. Other small, powerful words

So far this chapter has been mainly about the topic of modal operators. They are usually small words with surprisingly large effects. In the analysis of my transcripts, it emerged that there were
other small words, which also produced noticeable effects on people’s responses. I include my thoughts about these in this section. The transcripts of these questions also indicate the apparent ubiquity of internal dialogue in the development of people’s responses.

My interest in the effects of small words had influenced the design of my interview schedule, which I described in chapter 2. To this end I formulated three different questions, in order to ‘test’ their effects on people’s responses. These words were but, yet and feel. Questions 7, 8 and 12 were designed to explore these. They are three words which often trip off the tongue without much thought; this was another reason for investigating their effects.

7.6.1. Responses to the word ‘feel’.

The word feel seems now to have become interchangeable with terms such as ‘think’ and ‘believe’. It tends to be used indiscriminately in every day discourse. In my sample its effect was primarily to amplify the kinaesthetic dimension of people’s internal representation of the mildly unpleasant event I asked them to recall. I chose to invite people to think of a ‘mildly unpleasant event’ as I thought it would be easier for people to respond to. In retrospect, it seems that asking people to think of a pleasant experience may have been just as useful. I was careful that the ‘unpleasant event’ did not produce distress in my interlocutors.

I illustrate this by extracts from Beatrice and Lucy’s transcribed interviews.

6 Question 7.
Remember a mildly unpleasant experience. How do you feel about it?

7 Question 8.
A) You are good at NLP but you need to work on your rapport skills.
B) You need to work at your rapport skills but you are good at NLP.
C) Think about your rapport skills so that you can be even better at NLP.

8 Question 12,
A) you can’t do that
B) you can’t do that yet.
J. OK. [...] 'Remember a mildly unpleasant experience'.

*Beatrice:* OK.

*J.* What happens if I say to you 'how do you feel about it'?

*Beatrice:* The *kinaesthetic* that I can feel seems to be getting bigger.

*J.* So it's kind of amplified it?

*Beatrice:* Yes, it must have amplified it, because it's grown.

*J.* All right. So it's around about your midriff. (She was pointing to her midriff at the time, which is what generated this question).

*Beatrice:* I don't have a midriff. Yeah, it's down there.

Perhaps Lucy reported the strongest response.

*J.* Remember a mildly unpleasant experience and of course we're working content free so...

*Lucy:* A mildly unpleasant.... (laughs).

*J.* What happens if I ask you 'How do you feel about it'?

*Lucy:* You just, what you say, you just want to shrivel up, I'm doing it now.... How I feel about it? Well it goes straight to your gut.

I then went on to probe more into her kinaesthetic responses, and the effects, if any, it might have on her internal visual construction.

*J.* ... and you're not attending to the picture?

*Lucy:* No. I can... it's very still, it's just a head... I don't see myself... the feeling is the strongest thing.
J. And to the picture?

Lucy: There’s a little bit if... it’s very still, it’s just a head. I don’t see myself. The feeling is the strongest thing.

J. So just asking that, do you think that’s just amplified the feelings?

Lucy: Yeah, I suppose...

In each of these cases, using the word ‘feel’ as a question about their responses to a particular situation appeared to make them more aware of their internal kinaesthetic responses. It was as if the word caused their attention to go to the information about the situation that was coded in the kinaesthetic domain, rather than in other modalities. There is the possibility that it even blocked their attention of the information coded in other sensory domains. This raises questions about the usefulness of our tendency to use the word ‘feel’ as a general question about anything ranging from people’s opinions to their emotional responses. Suffice it to say that perhaps there are words that block off internal representations, just as there are words which can produce astounding internal changes.

7.6.2. Responses to the word ‘but’.

Such a blocking effect was not only produced by the word ‘feel’. One of the most interesting effects was produced by the word ‘but’, whose use produced surprisingly strong responses in my interlocutors. Its general effect was to diminish the force of the first half of the statement coming before the word ‘but’. I offer three extracts from the transcripts of the responses to my first statement to illustrate this. The third example is more complex, bringing internal dialogue into play.
J. What happens if I say 'you are good at NLP but you need to work on your rapport skills'? (I mean obviously this isn’t true... it’s just the process...)

Kathleen: I’ve only got the negative now. I need to work on my rapport skills.

Steve’s response was equally clear, and more detailed.

J. How do you respond if I say 'you are good at NLP but you need to work on your rapport skills’?

Steve: (Laughter). I get a strong kinaesthetic response. It’s called clenching my hands (laughter) a tightness in my stomach, and a heaviness, a tightness in my chest.

J. Because of which part of the sentence?

Steve: Because of the BUT. (Loudly).

J. OK. Interesting.

Steve: Em, em, yeah, because of the but. I can’t even remember what you said first, I know it was something about NLP. ... but you threw me then.(laughs) It’s like being thrown by a judo expert actually. (laughs).

Lucy, who responded to my first statement as follows, further demonstrated these effects of internal dialogue modifying internal responses: (I have underlined what I consider to be the most significant part).

Lucy: Well actually the first part, you are good at NLP that puts a big doubt straight away, it like, are you just saying that, and I’m saying, ‘am I’ and you start looking in yourself, well I am, am I? Are you just
trying to be nice to the person? Then internal dialogue happens saying don’t be so stupid, they’re being... I’m talking to myself. The BUT... I have to tell myself to be practical again, don’t be so stupid, that is how it is. I suppose that would bring a K response, thinking well OK, thanks!

When I reversed the two halves of the statement, still separated by the word ‘but’, people responded differently.

J. ... ‘You need to work on your rapport skills, but you’re good at NLP’.

Lucy: Ah, beautiful... compared to the other one... but you’re good at NLP, that just negated, that just got rid of that first one. (laugh) and I felt good about it. Big K big...

Steve’s response was similar to Lucy’s. However he ‘hears’ more of the content of the second part of the statement, which could imply that he has blocked the segment before the but.

J. So If I say you need to work on your rapport skills but you are good at NLP.

Steve: That is not as unpleasant, the kinaesthetic wasn’t as strong as the last...

J. So which bit, ... does any bit stay with you more than another?

Steve: NLP is what I heard.

The word ‘but’ appears to diminish the power of the information contained in the first half of a statement, unless it is over-ridden by another word with a stronger effect. This would seem to agree with Pinker’s (1994) views about the activity of making sense (the parser) needing to be able to identify the ‘head’ word, that is, the word which is then used as the context which structures the rest of the sentence.
I tentatively suggest that the approach that I am using enables one to explore the effects of syntax in this phenomenological way, by interrogating people's subjective experience of language.

7.6.3. Changing time frames with 'yet'.

It is tempting to generalise that in some cases the strongest effects are exerted by the smallest words. Certainly, exploring the effects of tagging 'yet' on to the end of a directive such as 'you can't do that' produced some surprising responses. My directives to my interlocutors followed the general pattern of 'So, you know, imagine something again that you might do, and I'm really going for the difference between when I say 'you can't do that' and 'you can't do that YET.' I give examples of their responses below,

The most critical distinction between these two directives was that the second one brought up the consciousness of future time in some of my respondents. For others, the provocative 'can't' seemed to generate a lot of internal dialogue, which produced additional effects. However, the introduction of the dimension of time in for some of my collaborators could imply that time may be a critical aspect of our internal constructs, though it may be dangerous to generalise from such a small sample. Consider Beatrice's responses where the second statement clearly brings the future into what she constructs internally in response to my statement:

Beatrice: [....] 'you can't do that' is dissolving my picture, and 'you can't do that yet' is freezing my picture.

J. So one is dissolving and one is freezing?

Beatrice: Yes, yes, it's freezing it. It's giving me an opportunity that I might get to do it in the future.
Edward’s response was equally unambiguous about the introduction of a future dimension to his thoughts. It is also interesting to note that, with the first directive, the use of the modal operator ‘can’t’ seemed to place the locus of control external to him, and he perceives it as being an inhibitory force. The second part of my statement produces a response in which a future possibility is reported as part of the constructed response. The word ‘yet’ seems to introduce the dimension of time into people’s constructs, as well as altering sub-modalities. I give one example of this from the transcripts.

*Edward: In as much as... not that I don’t have an ability but because you won’t let me do it.* (This was his response to the first statement.) *So when you say I can’t do that yet, I know have a picture in the distance, clear, it’s a bright picture, it’s a white picture which is just out there waiting for me to go towards. The kinaesthetic is in my legs, just waiting for me to go there, and, eh, there’s no sound.*

7. 7. Concluding reflections.

In this chapter I have explored and analysed the results of the transcripts of the interviews from four separate parts of my questionnaire. What unites them is that in each case I was interested in exploring the effects of certain short words included in statements. In each case the results point to the powerful effects of smaller words. The examples I used also showed the continuing appearance of internal dialogue. I began with a consideration of the effects of modal operators, which are words defining the mode in which a future activity is to be carried out. They are usually words of one syllable. What was interesting was that people had no difficulty in forming internal representations of events that had not yet happened. If we apply the cybernetic model, then the system has to have information about future events, because of the significance of the variable of time. The modal operators, in the main, seemed to influence how people conceived of a future task, and to play some part in influencing their approach to it. Modal operators also have a causal dimension;
they appear to have the ability for some people to alter their perception of causality, especially in relation to whether they perceived the cause as coming from within themselves, or as an external in origin.

What may be of significance in all this is that having explored such deceptively simple words, some fundamental epistemological processes have become more clearly delineated. Among these is the possibly archetypal process of linking cause and effect. Even more interesting is the notion that internal representations can code, even create, images of future events; thus they are not merely memory devices, or ways of thinking about information in the present. This ability to generate internal images of the future, apparently using all the senses, which then become a goal to be achieved, bears out the cyberneticians’ insistence that time should be considered as a critical variable in our mental constructs, and therefore our epistemology (Bateson 1972). It may be necessary for us to have clear representations of future events in order that they can be achieved. We thus need to ‘know’ about such outcomes, so that the dimension of time becomes a part of how we know. So the complex internal world of internal representations may be critical to our survival, in that they play a vital part in memory, learning and creating the future. 9

The importance of time as a critical variable seems also to be illustrated by people’s responses to the question designed to explore the effects of the word ‘yet’. Its main operation seems to have been to introduce the variable of time into people’s constructs. This appeared to produce some alterations in the configurations of the conceiver’s sub-modalities. In Edward’s case it generated a sense of movement towards a goal. The statement that did not include the

9 I discuss this further in Chapter 11, where I synthesise some of the findings into a hypothetical model of learning.
word ‘yet’ had a different effect on people, sometimes even inhibiting their representations of it. Although I hesitate to generalise from such a small sample, it could be that what has been uncovered in this phenomenological enquiry is the possibility that people respond to information about time in ways consistent with what cyberneticians have long held, namely that time plays a role in our constructs mediating knowing and being.

What the section containing the word ‘but’ illustrates is that some words apparently have the power to diminish the strength of the information that preceded it, and perhaps amplifies that which follows it. This may be of some significance to teachers, who may unconsciously give feedback syntaxed in such a way that the negative part of the message comes after the positive part, separated by ‘but’. The sentence ‘You did a good essay, but your spelling is not very good’ might thus have a different internal effect on the listener than ‘your spelling is not very good, but you did a good essay’.

Whereas the word ‘but’ appears to diminish the internal attention to the part of the sentence preceding it, the use of the word ‘feel’ used in the context of asking about an opinion or judgement, appeared to amplify the conceiving’s kinaesthetic response. Perhaps it just draws people’s attention to the ‘feeling’ content of an internal representation. Lynch (1985) reports observing patients with hypertension developing even more raised blood pressure when they were asked to talk about their feelings, as if this created or even amplified a physiological response. It is tempting to wonder if there was a similar mechanism at work; certainly certain words have the effect of catalysing internal searches and amplifying particular responses in different sensory modalities. I explore the importance of such internal searches, and their generation, in Chapter 11. They emerge as perhaps one of the most critical factors for the conceiving when learning, and making sense of information.
Chapter 8. Language, Thought and the Dimension of Time.

I just want to remark on the amazing property that conscious beings have to represent objects and states of affairs in the world, and to act on the basis of those representations. It is a general feature of most, though not all, conscious phenomena that they represent objects, events and states of affairs in the world ... It is a peculiar feature that the object need not actually exist in order to be represented by our intentional state. (Searle 1999:64-65).

An intention is embedded in its situation, in human customs and institutions. (Wittgenstein, in Kenny 1994:115).

Brain surgeon David Ingvar has studied the relationships between the biological functioning of the brain and the nervous system on the one hand and our behaviour in an organizational setting on the other. He calls it neurobiological management. One of the findings is that the individual registers – in physically identifiable sectors of the brain that can be even photographed – the past, the present and the future. (Gummeson 2000)\(^1\)

8.1. Introduction

This chapter explores the idea that the dimension of time is a variable in the construction of cognitive maps. This was another aspect to emerge from my study of the transcripts, from both phases of the data gathering. If one of the main ideas in cybernetics is that systems 'run' on information about both present and future events, then it would be expected that people would need to be able to construct representations of something that has not yet happened. Without this, the TOTE process, which I described in chapter 3, would be impossible. This seems to be borne out so far from what my

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collaborators have told me. The idea of feedback is only valid if the system can create a construct of the future. (I have reviewed the concepts of feedback and calibration in Chapter 3.) Feedback is information about the extent to which a system’s actions in the present are fulfilling its requirements for achieving an outcome in the future. The first kind of feedback is positive feedback, whose essential message to the system is that no change is necessary in order to stay on track. Negative feedback, on the other hand, informs the system that a change is necessary in order for it to be able to achieve what it set out to do. (Wiener 1961, Bateson 1972, Bateson and Bateson 1988).

This raises the possibility that such a continuous internal scanning and comparing between what is being experienced in the present, and what has been constructed about the future, is an important process in how we construct and utilise our cognitive maps. It may also play a role in the generation of actions. I was curious to find out more about people’s abilities to ‘move around in time’. This chapter is about my reflections on my participants’ abilities to utilise the dimension of past, present and future time as frameworks (or categories) for their thinking. The conceiver’s ability to change time frames may be another component to how we know.

I have already described how modal operators appear to influence people’s internal representations about their future activities in Chapter 7. This chapter is about the analyses of the parts of the interview schedule, where I used questions to explore some possible ways in which people created an internal representation of a future event as they were making sense of my words.

8.2. The interview questions addressed in this chapter.

This chapter focuses on the analysis and reflections on the transcripts of three of the questions from my interview schedule. I believe they illustrate aspects of the role of the dimension of time in people’s
cognitive processes. One of these is the last statement of question 8, some of which I have already used in the previous chapter to inquire into the effects of the word ‘but’. The segment from question 8 ‘so that you can be’ presupposes a future state. It also presupposes a causal link to an event that has yet to happen. Question 11 includes a deliberate request to change focus from the present (think of something you do really well,) to a possible future constructed state by being asked ‘How could you make it even better’. This question uses the modal operator ‘could’, as I believed that this might direct listeners’ attention to the future; I then used the comparative ‘deleter’ ‘better’ (Bandler and Grinder 1975) to explore its effects.

Question 13 was designed to explore people’s constructions of a future goal. I wanted to know whether words such as how, what and why, (which are frequently used to introduce questions) would produce different responses. I was also interested in finding out whether asking people to think about what it would be like to have achieved a goal would result in a change in their perceptual position, and what effects this might then have on the configuration of the internal representations and their sub-modalities.

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2 Question 8:
1. You are good at NLP but you need to work on your rapport skills
2. You need to work on your rapport skills but you are good at NLP.
3. Think about your rapport skills so that you can be even better at NLP.

3 Questions 11. Think of something you do really well.
How could you make it even better?
What are you not paying attention to?

4 Question 13. Think of a goal you have in life, something that you really want to do.
What do you need to achieve it?
Why will you achieve it?
How will you achieve it?
What will it be like to have achieved that goal?
Now think of the goal again, has anything changed?
8.3. The apparent comparing of information between present and future constructs in internal representations

Although question 8 set out to explore people’s responses to the word ‘but’ in the context of the kind of verbal feedback that one has often heard teachers use, the final statement was deliberately crafted to direct attention to the notion of improvement. *(Think about your rapport skills so that you can be even better at NLP.)*

Edward was aware of both movement and choice in his response.

*J.* ‘Think about your rapport skills so that you can be even better at NLP’.

*Edward:* Nice colour picture! (Here there is a very distinct change in the internal representation from the one that had occurred in response to the previous statement).

*J.* OK.

*Edward:* Em, sound, feelings that I’m trying to improve those skills, ... Something to work on so I know I can get better.

*J.* Movement?

*Edward:* No, it’s very bright, very bright picture, like the light at the end of the tunnel, although the tunnel .. It’s not dark but there’s definitely bright ....down.... *there’s something to move towards, something to work towards, so there’s a choice.*

I have underlined this section as it implies that he is experiencing choice, as well as a sense of being able to move towards a goal. Again, this brings in the *Leitmotif* of causality, with the added dimension that it appears that people can experience different degrees of feelings of being in control and being able to cause things
to happen. The words that I used to link 'rapport skills' with 'better at NLP' were so that you. This phrase, used in this context, presupposes a causal connection between the two. It appears to have set a direction for the developments of Edward's internal representations. When I then asked him about his kinaesthetic responses to the statement, he replied:

Edward: Em, a kinaesthetic, a good kinaesthetic, a very generative kinaesthetic.

J. In terms of attraction and repulsion, is there anything going on there?

Edward: It’s very attractive.

What I was trying to elicit with this question about attraction and repulsion was his sense of motivation in relation to his constructed goal. He replied unambiguously that it was attractive. For another interlocutor, Ina, her own internal response was experienced as pleasant. She said:

Ina: That's great, I'm happy, you're not questioning my ability, I'll just take it into account.

What emerges from these few excerpts is the idea that we seem able to link present to future in our mental constructs, so we are not, as it were, bound only by the time frame of the present. We can form informative links between past, present and future in order to obtain different perspectives. People seemed to have no difficulty in creating internal representations of future events, and then using them as sources of information. This emerged in the responses to question 11. Beatrice's response, for instance, was to develop a clearer picture, which enabled her to examine her actions in more detail.
Beatrice: The picture becomes clearer as if you’re examining the action that what you’re doing, examining what you’re doing, to see where you could do better. It’s like putting it under a microscope and I’m looking at every little bit of it very carefully to see what I’m doing, and it’s a light feeling...

Edward’s response also included some detail about his own subjective processes. I cite two extracts to illustrate this. This co-researcher often reported his kinaesthetic reactions in greater detail than information coded in other sensory modalities. What is also interesting is how he describes his internal activity as a search. I explore the possible significance of this process further in Chapter 11.

Edward: Ehm, that makes me go on an internal search, em, so I have a picture of what I do, and I’m looking for another picture where I can be doing it better, er, the kinaesthetic is everywhere, it’s one of energy. [...] It’s a search for a picture where I could be doing it better, the picture doesn’t come up (laughter) but it makes me look for comparisons, interestingly actually, yeah, the picture... looking for a picture of something where I’m doing it better is actually behind the picture I’m doing it well, [...] So all I have to do is actually see that new image so that I can then move towards it.

Again there is a reference to a sense of attraction towards an internally represented future event. Movement presupposes the existence of the passage of time. Edward also reported that he was aware of actively comparing his two internal representations. (I have explored the view that comparison is a fundamental epistemological process in Chapter 11.)

In Edward’s case, there was also evidence of a trans-derivational search; he uses the metaphor of ‘looking’ to describe this internal activity. Later in the interview, after he had time to reflect on his original responses, he enlarged on the sensation of searching for information in his constructed future:
Edward: ... maybe I’m just missing something that I’m not aware of that will allow me to step up to the next level. So what I’m looking for is what it is that I need to get me that next step?

Kathleen had no problems generating images of her doing something ‘even better’.

Kathleen. OK. ... (long pause) I modify the picture actually. I’ve a picture here, and ... I find I’ve made the picture a little bit clearer, the colours brighter, I’ve turned up the volume...

J. And let me just check. That was as the result of ‘how could you make it even better?’

Kathleen: Yeah, yeah. So in this situation I’m doing what I do well, better.

Lucy’s response again seemed to be dominated by her internal dialogue, which appeared to help her to develop her internal searches. She was often very informative about what she found through her introspections. One can identify the internal dialogue, the internal search, and the visual component of her internal responses in the following extract.

Lucy: (Pause) Searching, she’s searching, ahh, there was a bit of doubt there, internal dialogue, I can’t? can I? And how can I do it? it’s like (indistinct) if I can do that then you can... slight movement to my right, em.... It’s going over now... where’s it gone? Slight movement to my right on to the future... right, so if I did that then I could see myself being able to do better.

People appear to respond to words and phrases in their own unique way. What remains constant is that they use their senses internally as an inevitable response to words, and language in general. These
activities seem to involve searching, internal dialogue, comparison, and the ability to use different time frames as contexts to generate other kinds of internal representations. Similar patterns were found in transcripts of parts of interviews that I have not cited for the sake of brevity.

8. 4. Goals and outcomes; back to the future.

Question 13 was used to explore people's internal representations of future events, and the possible influence of different words and syntaxed phrases on this process. This was a complex question, as I was curious to find out more about a number of things, such as the effects of asking different questions about something that affected people's internal representations. So I set about asking people about a goal in a way that would present them with that goal in different contexts, using what, how and why questions, and then asking them to change their perceptual position into the future 'as if' they had achieved the goal. I then asked them to think about the original goal, and inquired whether anything had changed in their own representations of the outcome they had been invited to think about. Partly as the result of these responses, I became more aware that goals were emerging as important. I have therefore cited extracts from each of the transcribed interviews.

8.4.1. What' and 'how' questions.

The responses to this particular set of questions and directives were complex. People had no apparent difficulty in creating internal representations of a goal they had in life. Every one of my six collaborators was able to generate an internal representation about this future event without difficulty. Then, being asked the what, how and why questions generated clear alterations in these representations. This is well illustrated by Beatrice's response.
J. And as you pay attention to that internal representation, what happens if I ask you ‘what do you need to achieve it’?

Beatrice: (pauses) Well there’s something happened, but I don’t know what’s happening.

J. Take your time, just run over it again and see...

Beatrice: There’s a series of pictures below it, of different, I don’t know whether they’re resources or skills, different things that I will need to achieve this final goal.

Edward’s responses were also informative, demonstrating the ubiquitous occurrence of internal dialogue and its effects. My questions seemed to send him on an internal search, which itself then altered his own representations. He forms links between his own internal dialogue and his awareness of his kinaesthetic states, almost as if his bodily responses were acting as a context for the kind of inner talk that he produced. To the ‘what’ question, he responded:

Edward: Right, I have a picture which is just a bright circle, em, no sounds, the bright circle is what I’m going to achieve when I get there, the kinaesthetic is one of, it’s quite calming, it’s a calming kinaesthetic, it’s quite relaxing so that it slows me down getting to where I want to be, so that it allows me to be aware of how I’m getting there, so I can get there properly. Em, I also have.... I can hear music, now I hear the music because it’s becoming anchored to getting to where I’m going, so I can hear that quite clearly, though it’s just very gentle, em, again it’s really the kinaesthetic ...it’s one of peace, it’s a feeling of em, take it slowly, sensible, there’s no rush....

J. Is that a kinaesthetic or an internal dialogue?

Edward: It’s, yeah, it’s an internal dialogue but it’s coming off the kinaesthetic.
Edward: Yeah, because the kinaesthetic is there, it’s all built up, but it’s holding itself back and that in itself is saying to me ‘take your time, do it properly, you know you can get there so just take the time to get there’.

Again, internal dialogue emerges as one of the key factors catalysing the further development of his internal representations. Lucy’s response to my question ‘what will you need to achieve it’ generated the response: What do I need to achieve it? Internal dialogue happening big time. My picture’s obviously moved now to where I am now, it’s a long picture. When I was interviewing Lucy, I became aware that she used a lot of internal dialogue, so I sometimes asked her about it. I wondered whether it affected some of the sub-modalities. In this extract, we may be witnessing a link between her internal words, and changes in the size of her picture.

Lucy: [...] I don’t know whether I’m trying to make it bright but I’m just sort of at the moment have to be patient, so I know what’s got to be done to get there... a lot of internal dialogue.

J. Yeah. Can I just check something with you? Has the picture got bigger?

Lucy: It did actually for a bit there.

Sometimes my interlocutors had difficulties in describing their internal processes, so I hesitate to draw any conclusions from some parts of these transcripts. However, one can recognise changes in people’s perceptual positions, and the re-organisation of information in the next extract. In response to my ‘how’ question, she responded:

Lucy: It seems to have moved back to my left and my right and I have moved myself forward again, ... OK. Yep. I’m internal
dialoguing, visualising, *em*, the picture’s... actually when you first said that... sort of here, like a what do you call it, just sort of opening out...

I interpret her description of something ‘sort of opening out’ as indicating that she experienced some sort of movement in response to the ‘how’. Certainly, the ‘how’ question produced changes in how Edward’s internal representations were organised. They seemed to bring images of the sub-goals that he needed to achieve on the way to his consciousness.

*Edward*: (pause) *it’s an internal dialogue, with a set of pictures with the overall goal is again this very bright circle, but leading up to the circle is this set of pictures which are the individual goals in getting to the overall goal.*

Kathleen’s response also showed that the word ‘how’ produced a re-organisation of the internal representations she was ‘mentally’ scanning. In this case her ‘series of pictures’ were organised from her left side to the right, as if they were sequenced and located in the space in front of her.

*Kathleen*: (pause) ... *I have a series of pictures now coming back from this one.*

*J.* And are they going from right to left? (I asked her this because she was pointing with her hand from her right to her left).

*Kathleen*: (pause) well that’s the future event, (pointing to the right) and these are events leading up to it, (pointing to the left) so I guess that it’s going from left to right.

Beatrice’s response also showed a re-organisation of her thinking. For her, the key word ‘how’ produced movement.
Beatrice: All the little pictures are moving, I can see myself doing this and this and this and this, ... (Gesticulating).

How and what apparently produced a different kind of information processing at the level of sub-modalities. In a sense, they also seem to behave as Pinker's (1994) 'head' words, acting as a kind of metaphorical hook on which the rest of the meaning hangs. They can also be thought of as words that create a category, which then acts as a framework which influences the de-coding of the rest of the statement. They may act as metaphorical signposts, setting a direction for the internal search for coherence and meaning.

8.4.2. 'Why' questions.

The responses to the 'why' question, produced different responses from the 'what?' and 'how?' questions. They indicated that another basic epistemological process had been brought into play, namely that of causality.

The word 'why' seems to elicit causal thinking. Edward's answer to my question 'why will you achieve it' produced an answer, which implied that far broader issues were now involved than, had been the case with the 'how' and 'what' questions. These broader issues covered not only information about his perception of the causality behind the desired activity, but also invoked his own sense of self, which is a more complex construct. For Edward, this sense of self had a strong kinaesthetic component. Again, internal dialogue seemed to activate further responses, which appeared to lead to him to experience a sense of choice.

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5 I have described this in Chapter 5, and suggest it is an essential aspect of the model of learning that emerges from this inquiry. I explain this in Chapter 11.
Edward: It's a single picture, and it's a single picture built on the kinaesthetic of who I am. Because I choose to do it, so there's an internal dialogue which says 'because I choose to do it'.

A similar pattern or response was shown by Kathleen. This short extract from the transcript indicates something of the emergence of her sense of self; that this is something where she has a sense of her own autonomous position, and where the desired outcome is something that she wants.

J. [...] What do you think is the major change produced by the question 'why'?

Kathleen: (pause) ... I have to decide if I want... I suppose really to re-check myself again, to see if this is what I want, ... my goal, and I've decided that it is, more achievable.

J. So did it? ... just let me check this out.

Kathleen: OK.

J. Did it send you inside to check something?

Kathleen: Yeah.

J. How did you check it?

Kathleen: Erm, I asked myself, is this definitely a goal I want, is this definitely a goal I want to achieve?

J. And what said 'yes' to you?

Kathleen: It was an emotion, a kinaesthetic that okeyed it with me.
Ina’s responses were shorter, but still reveal the role of internal dialogue. They also convey a sense of her being in charge. She vouchsafed to me that her goal was to obtain a degree. She uses the modal operator ‘want to’ followed by information about the necessity of it for her. This was one of the rare occasions when content came into the answers.

*Ina:* *Because I want to achieve it. There’s a need. I have to.*

*J.* *You touched your chest right then. Is that like a K?*

*Ina:* *I have to.*

Lucy’s responses also showed a similar pattern, where a sense of self seems to be important, and her internal dialogue extends the response.

*Lucy:* *Why? .... Why.... Why will I achieve it? There’s a K and I’m looking up and I’m trying to.... Why will I achieve it? Because I want to.*

*J.* *Is that internal dialogue?*

*Lucy: Yes, the internal dialogue going on because I want to.*

Later she elaborates on the importance of the goal to her life. As she was thinking about the answer to my question, she had looked upwards, as if the location of the picture was high up.

*Lucy:* *Well I actually looked up didn’t I, like it is, it’s up high for me to achieve that that goal, one of my aims for my life, so...*

Steve’s responses were somewhat sparser; however, they do show sub-modality changes in response to ‘why’. This is also an example of where using a strictly NLP approach to questioning about sub-
modality changes may lead to the researcher missing out on information, because of focussing too much on content rather than people's processes.

J. Does anything change about the goal when I ask 'why'?

Steve: (Long pause). Actually, it's the picture has become still and framed, but the... actually kinaesthetic isn't as noticeable.

Perhaps the simplest and most telling answer was offered by Beatrice, who told me that:

Beatrice: There's no change in any of the pictures but there's internal dialogue.

J. OK.

Beatrice: I just tell myself I want to. (My emphasis).

8.5. Changing perceptual positions in time

With this part of the question, I wanted to explore what happened when I asked people to shift their perceptual position, from one where they were in the present looking towards a future outcome, to another one of actually imagining themselves in the future looking back, to having achieved their goal. By perceptual position, I mean the conceptual standpoint from which something is viewed.

We can use the example of a glass being seen as half empty or half full to illustrate what is meant by taking two different perceptual positions. In the first one, one can assume that emptyness forms the framework (or category) within which the viewer observes the glass.

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6 What will it be like to have achieved that goal?
In the other one, fullness, actual or potential, forms a different framework. Both are different perceptual positions.

With these questions, I was interested to find out whether time itself (in the forms of past, present and future) could act as a perceptual framework or standpoint from which an event was viewed by the conceiver.

When I asked Beatrice what will it be like to have achieved that goal? her description of how she conceived the achievement changed. It became more intense, both visually and kinaesthetically.

*Beatrice*: The big picture has started moving faster, you know it’s a very strong kinaesthetic and I think it’s got brighter, it’s just an overall feeling that it would be right for me.

Edward’s response also described changes in both the kinaesthetic and visual elements of his internal representations. He also reported on an awareness of his internal dialogue.

*Edward*: Oh that’s a big kinaesthetic in my chest of.... Oh the picture gets very bright, the circle gets very bright [...] and there’s an internal dialogue that goes with it.

Kathleen’s response was to engage more with the outcome by associating with it, which means thinking about it as if it were happening to her in the present, and being fully emotionally engaged.

*Kathleen*: (pause) Yeah, I’m in the picture now, I’m associated. (coughs). (She uses her arms to describe a circle around her).

J. So if you’re associated, the picture’s all round? OK?

For Lucy the thought of having achieved the outcome was pleasurable, and she reported a strong kinaesthetic response.
Lucy: OK. I'm looking around now, to my right again. I'm having a K, a big K response, I'm seeing what it would be like...

J. Picture moved?

Lucy: The picture's moved, definitely moved. I suppose I'm looking into the future. Like, looking into the future... Big K, big K, can chill out now.

J. Good. Right (laughter) Picture's still clear or not?

Lucy: Picture's very clear, picture's very clear yeah!

Steve's response was to generate a number of pictures. When I asked him how many, he described how he took (at least) three different perceptual positions

Steve: Yeah, I have the three of them. (laughter) That's what I have done. What I have is a picture of more or less present time, I have me having achieved the goal, the day after, or very shortly after, and I have a picture of me in a couple of years time actually looking back, physically looking back ... but I'm not doing anything, just standing looking at the scene, disinterested.

These responses indicate that internal representations can be influenced by the time frame the information is assigned to. People seem to be able to construct an internal representation of the present looking into the future, and then also a future in which they have achieved something. Then they appear also to be able to look back to the present. From what my collaborators reported, these different perceptual positions seemed clearly distinguished by sub-modality changes, as well as internal dialogue.
The next part of the question was designed to bring my interlocutors back into the present, after journeying, as it were, through a number of different perceptual positions, which were elicited by the words that I used. I was curious to find out whether the original internal representation of their outcomes had changed. The answers were ambiguous; for some of my interlocutors there had been changes, for others, they were not aware of any alterations. Beatrice’s response described some of these changes.

J. So now think of the original goal again, and notice if anything’s changed?

Beatrice: (pause) I think they’ve combined the original goal and the outcome, kind of, it’s all the one picture now, it’s bigger, it’s more a rectangular... square. No difference in brightness, there’s movement and it’s got a border round it, it’s a movie.

She also told me that she felt herself to be ‘in’ the movie’, which is another change in perceptual position. For both Lucy and Edward the main changes were differences in their kinaesthetic responses, with no apparent change in their visual content. For Steve the question eliminated the visual part of his internal representation. In Kathleen’s case, there were very clear changes. Here the process of questioning her in such a way that she altered her internal representation of the goal also altered the perception of her original construct.

J. [...] So I’m interested now to see what happens if I ask you to think of the original goal again.

Kathleen: It’s actually different! (surprised). It’s changed. The goal is actually changed.

J. Has it changed in content, or has it changed how it’s represented?
Kathleen: It’s a slight variation in the content. And I think because I have associated myself in that future goal, it’s now more achievable, and ... I can say there is a variation in the content. I just remember what the initial picture was up there.

Ina described the process in some detail, as well as offering more information about the difference between her responses to the ‘why’, and the ‘how’ questions.

J. So when you think of the goal again, has that changed?

Ina: Yeah, it’s like I’m on my way to achieve it.

J. Movement? Attraction?

Ina: Yeah, whereas the ‘how’ stopped me, because I was like.... I’ve got this list, how am I going to do it, That’s what I said, I hadn’t activated my list yet. But saying that I’ve achieved it, and how do I feel, it feels the ‘how’ has already been done, because I’ve done it, and I’ve succeeded, very happy.

I suggest that such questions, which asked people to think of the same event in different ways, indicate that words apparently have the power to direct, influence, and categorise how information is coded at the sensory level. They seem to be able to effect a change in perceptual position in the conceiver. This implies that we may have considerable flexibility at this level of processing. This is shown not only at the apparently basic level of sub-modality changes, but also in people’s ability to use the dimension of time as a category within which information is re-organised. It is as if we have the ability to change, to modify, to manipulate and to draw on information coded at many levels. If this is indeed the case, then it makes the phenomenon of internal representations an essential aspect of the processes of

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7 I have reviewed some recent ideas about the effects of categorisation on perception in chapter 3.
thinking, memorising, reflecting, planning and learning. What emerges is that sometimes, in order to make sense, we compare information between the time that was, and that is yet to be. Internal dialogue may possibly be involved in these comparisons. This could be another part of the phenomenon of making sense.

8.6. Changing time frames

One of my questions (number 6\(^8\)) set out to explore what happened when people were deliberately asked to shift their perceptual positions about a constructed future event. So the first question asked them to think of something ‘that you have to do, but you’re not particularly sure you want to do it’. I wanted to see what effect it would have if I then asked them to imagine that they were in a future having completed the task. I was interested in what would change as the result of asking them make such shifts in their perceptual positions.

Beatrice reported distinct differences in her representation of the event considered from these two different perspectives.

*Beatrice:* The picture has changed... To what’s in the picture has come with me into the future. Does that make sense? No?. (laughter)

*J.* Everything is OK. Every response is absolutely fine.

*Beatrice:* The picture has changed, I was disassociated, now I’m associated, and it’s in the future. I imagine the outcome of what this would be.

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\(^8\) Question 6.

*a)* Think of something you have to do but you’re not sure you particularly want to do it.

*b)* Now imagine you were in the future having done it.
J. So you’re actually associated into the outcome. So is that a different picture from the first one?

Beatrice: Yes, totally different picture.

For Edward, on the other hand, the picture of the task in the future was fuzzy and grey, and associated with unpleasant sensations. Having achieved it then produced a clear picture, and a different kinaesthetic.

J. Yeah OK. Now imagine you were in the future having done it.

Edward: Kinaesthetic, eh, kinaesthetic of relief.....

J. Mh mh.

Edward: The object has gone out of the picture, the picture’s still there, it’s a 3 dimensional picture ... clear.

J. Picture’s still in the same place?

Edward: Yeah, and still no sound. (Coughs)

For Kathleen, the picture changed from black and white, to having some colour in it, and was then accompanied by a different kinaesthetic.

Kathleen: And here it’s like a black and white snap shot. It’s not... now that I’ve done it and looking back on it, because it is small and framed, but there is colour in it.

Some people’s answers were more complex; both Kathleen and Lucy, for instance, reported that they used a lot of internal dialogue, and that they experienced their pictures as having two different locations,
as it were, in the physical space in front of them. On being asked the second part of the question, Lucy’s response was:

Lucy: Yeah, well I feel good, like the K is definitely there, so the K would be the big thing.

J. What’s happened to the picture?

Lucy: Eh, ah well yeah, it’s moved over again to my left, it’s past, much bigger, done it, yeah, move on again.

Steve also produced a similar response, and eloquently summed up the differences between his conceptions of assigning information to the two time frames. It seems that his internal representation of the future event (the first response) also altered when he became aware of the second internal representation. He reported that he also experienced a marked kinaesthetic change.

Steve: The future? Em, yeah. Pause... I have another strong... at first I get a kinaesthetic response, that is the tightness exploded actually and became fairly loose. The picture is further to the right, and I still see the other picture. It is framed, but it’s 3D, it’s like a doll’s house room if you like. The other one is actually duller, even duller now, and further away.

8.7. Conclusion

In this chapter I explored the idea that internal representations are not only constructs about past and present events or actions. Although it is dangerous to generalise from such a small sample, we also seem to have an extraordinary ability to move about in time. It also appears that when we change time frames, the information may be re-configured. Time seems to emerge as an essential agent for the categorisation of much information in this context. It becomes an integral part of the phenomenology of internal representations. As
such, it also appears that these dynamics operate in a truly cybernetic way. Systems can process information about past, present and future events, and use this as a basis for both feedback and calibration. We seem to be able to use our powers to re-create experience internally using our senses in order to make sense and develop meaning. Internal representations also appear to act as a basis for generating actions.

The words that we use seem to be both catalyst for the emerging and changing internal representations, and metaphorical frameworks that hold them in place. Our internal worlds are dynamic, changing, and can move us through time and present us with what was, what is, and what could be. Words can act as catalyst and stabiliser of our interior microcosm in an almost alchemical way. Sometimes they evoke changes, other times they frame information so that the meaning is transformed. This makes them essential not only for enabling us to know, but also for how to know. They thus have a truly (and awesome) epistemological function, drawing on, and bringing into play a variety of different processes for the constructing of cognitive maps.
Chapter 9. Words, and the Generation of Internal Responses.

Now, the interior of language (the language of thought) is essentially a sub-sentence language; of course it can include complete sentences, but the code of the genre does not require this for the success and advantage of the communication. (Roland Barthes 1989:95).

9.1. Introduction

This is the last chapter on the analysis of my own interviews. I include it because in preceding chapters it emerged that certain words apparently produced far reaching effects on directing the conceptual processes that my interlocutors reported on. Here I review my findings from the transcripts of four questions that have not yet been covered, (Questions 1, 2, 14 and 15). I have written this chapter in the interest of transparency, that is, to present as complete an account of my findings from the transcribed interviews as space allows. Other aspects of our conscious and unconscious processes came to light. It was often difficult to select the novel aspects of the phenomena that emerged under my scrutiny. Thus in this chapter I add nothing new in the sense that it has already been demonstrated that words and syntax can produce responses in the listener at many levels. However, a number of themes also re-emerge, adding more examples of what I believe to be fundamental epistemological processes mediated through particular language structures. My reflections on these form the substance of chapter 11.

9.2. Setting directions for internal searches, and the consequences.

With questions 1\(^1\) and 15\(^2\) I had set out to explore the effects of using words that could direct people to process information in a particular
way. Can certain words set directions for people's internal searches? I wondered what sort of effects using directive words such as 'think', 'remember' and 'be aware' at the beginning of utterances could have on how people then went on to construct their internal representations. I had already found that initial words seemed to 'override' the effects of subsequently used ones. What I found was these words seemed to set a direction for the internal search, influencing what was attended to. I deliberately separated these two questions during the actual interview; one came right at the beginning, and the other one was asked towards the end. In each case my interlocutors reported different responses. I give some of the most illustrative examples without going through each of the respondents' comments.

J [...] If I say to you 'Think of a time when you were happy', what's your response?

Edward: It's a very vague internal search. Because I'm looking for a memory, and it doesn't really do anything for me.

J. If I say 'remember a time when you were happy'?

Edward: It's more effective.

J. Do you get a picture?

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1 Question 1.
a) Think of a time when you were happy,
b) Remember a time when you were happy,

2 Question 15
a) Think about how much you have learned,
b) are you aware of how much you have learned?

3 See chapter 6.
Edward: Yes I am doing. It's very easy with that to find something. They all come rushing to the forefront. mmm. Yeah. It's a very relaxing way to ask it.

J. Yeah.

Edward: It's very comfortable. The other one is a very sort of cold and blunt thing to ask, whereas remember is a very relaxing, very warm way of being led into what it is you are asking me to remember.

Here it was as if I had happened upon a group of words that influenced the respondents’ modes of awareness. These in turn affected the internal responses that were evoked and any memories that were accessed. It is likely that they acted as categorisers influencing how the rest of the information was then attended to. For most of my respondents, the word ‘remember’ produced more internal representations and sub-modality distinctions. There was one exception, Lucy, for whom the directive ‘think’ produced a greater response than did ‘remember’. These extracts also illustrate the role of internal dialogue. I have underlined Lucy’s words where she reports that talking about something alters her internal representation. In this case it is not clear whether it is her internal dialogue or ‘external’ speech that is influencing the development of these responses.

J. [...] So, the first sentence is ‘Think of a time when you were happy.’

Lucy: OK. Well obviously I go inside, and I'm looking at a picture, search for a picture, and I see the picture and then all the other feelings, the kinaesthetic feelings take over, the sounds... Oh it’s getting bright now as I’m talking about it now actually. (Here the internal dialogue seems to amplify the responses.

J. So you talking about it influences...
Lucy: It’s the picture for me now is getting bigger and I’m hearing, feeling those feelings that I might feel, yeah, sounds, that sort of thing, as they’re getting stronger! Whoa!

J. As you’re talking about it?

Lucy: As I’m talking about it it’s bringing it back more. Yeah Yeah (Author’s emphasis).

J. OK. I wonder how that’s different to if I say ‘remember a time when you were happy’?

Lucy: Remember a time... it sounds like the way you maybe said it to me, a little sadder. I don’t know. Remember a time... it’s like it’s more in the past.... Remember a time... it seems its more like in the past and it’s not continuing on! ... that was my initial reaction ‘remember a time?’ ehm.... If I pick the same thing though it’s a little harder. Remember a time seems very in the past. (Lucy looks to the left.)

J. Mh Mh. because you’re looking to the left.

Lucy: Yeah.

J. So has the picture moved?

Lucy: It must have!

Later she told me even more about the different effects of her own use of ‘think’ and ‘remember’ in her internal dialogues.

Lucy: Well as I was talking to you with the ‘think’ one I was becoming more associated as I was talking. The ‘remember’ one I still haven’t really thought of something because that good thing I thought of was so big.... If I can just think of something... remember something,
remember something... OK, if I keep talking about it I would be there...(My emphasis).

Steve also reported different responses to the two key words. The same kinds of responses were also reported for question 15. Some of them were quite startling. Beatrice, for instance, reported a dramatic shift in the context of her internal representations. In response to the directive to ‘think’ she immediately accessed memories of the course, whereas when asked to be ‘aware’, there is a conceptual shift from certainty about her own learning, to self-doubt.

J. ‘Think about how much you’ve learnt’

Beatrice: It’s a moving picture of the last what is it, six or seven weeks, us all together, I don’t know, that’s just it. The whole crowd of us.

J. Moving?

Beatrice: Yeah, all moving, colour, sound, taste, it’s got everything in it.

J. What’s the sound?

Beatrice: Chatter! (laughter)

J. And how is that different to if I were to ask you ‘are you aware of how much you’ve learnt?’

Beatrice: That’s different, that’s me on my own, ... it’s me on my own, still reading still learning, but probably not sure if I have really learnt...

J. So there’s a bit of doubt in the second one?
   Beatrice: Yeah.
J. OK. Was there any doubt in the first one?

Beatrice: No.

Some of Edward’s responses were illuminating. Sometimes it is difficult to interpret them from the bare text of the transcripts. However, the following extract gives some indication that the word ‘think’ elicited responses in the visual domain, whereas ‘aware’ turned his attention to his kinaesthetic sensations. His responses were sometimes almost incomprehensible; I suggest that this is because we may have been uncovering information for which we do not have an adequate terminology. So making sense of this extract may not be possible; nevertheless it shows a dramatic difference between his responses to ‘think’ and ‘remember’. It would be naïve to expect total verbal clarity about people’s introspections at such depths. At the end of his replies to the first question, I asked him:

J. Can I ask you which came first, the pictures or the K?

Edward: The pictures.

J. And if I rephrase that thing slightly and say ‘are you aware of how much you’ve learnt?’

Edward: Yeah the picture shifts up here, but it still has... not a but, and it still has a connection to the original picture. Interestingly what it does is that here are slides that come from this picture, so they’re the slides of the things I’m aware of...em..... they’re bigger. (pause) They’re not... they’re just there. They’re not actually sitting or connected to anything... The connection isn’t a physical connection; it’s an ethereal connection.

At this point, I wanted to know more about what he experienced as the sensory specific complex equivalences for the word ‘ethereal’.
J. How do you know it’s a connection?

Edward: Because it just is.

Still wanting more information, I referred him back to the more specific details of his internal representations.

J. What sense would that connection be in?

Edward: (long pause) I guess it’s a kinaesthetic, it has to be because it’s a feeling. Yeah, it’s a feeling, definitely.

I had observed him looking to the right when he was describing the visual components of his responses to the directive ‘think’. One of the sub-modality distinctions is the apparent location in space of the conceiver’s internal representation (Bandler and Macdonald 1988). I was intrigued to know more about his original ‘picture’.

J. And what’s different about the picture over here to your right?

Edward: Oh it’s not anchored, whereas these pictures are anchored. This actually I can move with me. This one is anchored. Erm, this one is em, interestingly as if it’s sort of carved in stone, it has a sort of weight to it.

J. That’s the left one, yeah?

Edward: Whereas this one doesn’t have a weight to it, it’s a part of me, this is a part of me but waiting for me to... erm... gain what it has to offer, and once I manage to bring that in as being part of me, it comes up here... (Indistinct).

J. And this picture is bigger? The one on the right?
Edward: This one has bands around it, slides. This one doesn’t.

J. Is it a movie?

Edward: No, it’s just a.... it’s not a movie, it’s eh, it’s not a movie in the sense of the word movie, it’s like a nebulous movement.

J. OK.

Edward: Whereas this one is big pictures in front...

J. Are these clear?

Edward: They’re actually like words,... words, things sort of waiting to... integrate themselves into what I’m learning, whereas these the words are no longer here because they are mixing and intermingling with what I’ve already learnt. And growing, it’s actually, actually growing.

For Ina, this question produced very different, but equally dramatic shifts in her internal representations. To the first directive, containing the word ‘think’ she immediately produced a lot of ‘busy’ internal representations of activities such as reading and writing, and seeing herself writing notes about various topics. This was one of the few times that my interlocutors ‘lapsed’ into content.

Ina: I’m forever making notes, so if I hear something, or I hear of a practice, or a skill, or just things people say, or I’ve attended these various symposiums or seminars, I put it down, ‘oh maybe that will come in handy for the hospital’, or ‘maybe that will come in handy towards so and so’. I’ll look that up. In my job I can do that, whereas the other girls can’t.

Her responses to the word ‘aware’ seemed confused, and the internal searches become more apparent.
J. So what happens if I say 'Are you aware of how much you've learnt'?

Ina: (pause) I know what I know. ... but I've still got to learn more. I don't know everything. It's that word 'aware'. I still have yet to learn.

J. It seemed to me that you were searching much more.

Ina: I can't put down how much I know, how much I've learnt, it's just I can't... I can't I've learnt this, tick, I've learnt that, tick. I know what I know. There's still other things I have to learn. So I'm probably more aware of what I might need to know, than to what I already know.

Here the word 'aware' appears to have shifted the context of Ina's internal representations, and turned her internal focus to what she had yet to learn. This appeared to produce more of a trans-derivational search. For Lucy on the other hand, the word 'aware' produced a stronger kinaesthetic response. Interestingly, she changed the position she was sitting in, straightening her back when I asked her 'are you aware of how much you have learnt'. For her, the main difference between the 'think', and the awareness command was 'it just ... feels nicer'.

With Steve, the main difference was also experienced as kinaesthetic. In his case, as with Edward, it produced a complex response, which is not easy to make sense of. The first part of the question evoked clear memories of a classroom situation, with a teacher whose voice he could hear, and experienced as unpleasant. I questioned him about this.

J. What sort of voice is it?

Steve: It's ... a grumpy sort of ... staccato voice, with a deep tonality.
J. Whose voice is it?

Steve: It's the voice of one of my teachers.

J. OK. Right.

Steve: So annoying!

His response to the directive to be 'aware' was dramatically different. It seemed to move his focus to his kinaesthetic responses, and appeared to 'block out' the visual and auditory components that had been there originally.

Steve: Well, that feels completely different, I feel a sense of, it gives me a feeling of... nervousness, but not in ... I suppose awareness would be one word, aware of my nerve endings, nervous sensation but not nervousness in the traditional sense of anxiety or anything like that. A sense that I'm more aware of everything actually, I know that's a huge jumping off block but I seem .... I don't have a picture, strangely for this, I just have a kinaesthetic, I don't even have an auditory. A kinaesthetic of sort of magical feeling, it's difficult to describe but I sort of feel my nerve endings or something, you know, it's very difficult to explain, em, it's mainly a feeling, I don't see a picture.

9.3. Negations

I have already suggested that there are words, such as 'but' that appear to weaken or delete the internal responses to the representations which emerged in response to the words preceding 'but'. I have described these in chapter 7. I include a consideration of negation in this chapter, because it appears to produce strong internal responses, which appear to influence how internal representations and sub-modalities are then configured by the conceiver. Some of
the responses highlight the role of internal dialogue as an aid to internal searching.

It is believed that the unconscious cannot compute a negative. (Erickson 1980, Bandler and Grinder 1975A). With question 14 I deliberately set out to explore the effects of asking people not to think about something. The first statement ‘You must not imagine a blue camel’ was included to lighten the atmosphere. All the respondents immediately reported that they ‘saw’ a blue camel, before they could ‘delete’ it. The second and third statements were somewhat more searching, and deliberately used the language that could be associated with the context of a classroom, or other learning situation. Ina’s response to ‘don’t make that mistake again’ was typical. It also demonstrates that she uses internal dialogue to process my command.

Ina: It doesn’t feel too good.

J. You maybe think of a mistake?

Ina: Yeah

J. I said don’t...

Ina: ...Just thinks of the things you’ve done, cringing, good cringe, just ‘don’t do it again’.

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4 Question 14.

How do you respond to each of the following statements?
A) You must not imagine a blue camel.
B) Don’t make that mistake again.
c) Don’t think about failure.
In Lucy’s case, her response was to change the modal operators of her internal dialogue as she seemed to sort through the internal representations that were evoked. First she said:

Lucy: (laughter) Don’t make that mistake again? Don’t make that mistake again. What mistake again... OK, a bit of movement, don’t make that mistake again. I suppose I am a bit nervy about doing it again! (Laughter).

Then she elaborated on what she was thinking, and brought herself, through her own internal dialogue, to a position of choice, (I will if I want to!).

Lucy: Well I suppose I could make that mistake again then. Don’t make that mistake again. What do you mean, don’t make that mistake again... I will if I want to!

In Kathleen’s case, the mention of the word ‘failure’ produced a strong emotional and kinaesthetic response.

J. What happens if I say ‘don’t think about failure’?

Kathleen: That’s just shut up... there’s a falling in the pit of my stomach, the picture zoomed up here, sounds like a swish, (indistinct).

Lucy reported that she ‘saw’ the word failure in response to my statement.

J. OK. What happens if I say to you don’t think about failure?

Lucy: I looked to my left. I suppose failure? Internal dialogue. I look to my left. I see the word ‘failure’.
J. And you've just been told not to think about it!

Lucy: Yeah I know, yeah, I went straight to it, straight to it, and I see the word 'failure'.

Here we may have examples of words that have the power to evoke strong emotional responses, even when people were asked not to think about them. Not only can the unconscious not compute a negative, there appear to be some powerful words that will elicit strong responses whatever their context. In this section I have considered words that appear to set an internal direction for trans-derivational searches, and set the context for how the information is to be accessed. Negations, on the other hand, do not necessarily block searches. The concever seems to first need to produce an internal representation in order then to negate it.

9.4. Sameness and difference as two ways of attending to information

One of the factors to have emerged from this study is the possibility that words can evoke specific epistemological processes. These are used in the construction of conceptual maps, and include the recasting of information coded at the levels of internal representations. Such processes include categorisation, changing perceptual positions, generating trans-derivational searches, comparisons, and using internal dialogue to generate more information. My interest was increasingly becoming focused on the processes that we use to construct our maps. For this reason I include some information about one of the questions in my interview schedule, where I sought to elicit comparison, and wondered about the differences between asking someone to focus on similarity, and then on difference. In chapter 3, I suggested that there was evidence that comparison may be an important conceptual process. The question then arose whether it was possible to elicit these processes in people by the words that one used.
This question was designed to elicit people’s responses when asked to consider the similarities and difference between two events. So I included a question\(^5\), which asked people to focus on ‘sameness’ and ‘difference’. I only asked it of four of my interlocutors, as I felt, as the interviews were progressing, that this part of the interview may have been too reminiscent of an exercise I had set them during their course. I nevertheless include some of the information that I gleaned from these, though I hesitate to draw too many conclusions from only three transcripts. (It is one of the aspects of this research that in retrospect I would have liked to have explored further, using different types of questions.)

The ability to perceive similarities and differences are considered by Bateson (1972) to be among our basic epistemological processes. In order to categorise events or objects, it is necessary to be able to perceive similarities between them; a category is essentially a conceptual device to lump similar ‘things’ together. Without this ability to perceive similarities, what may be a fundamental epistemological activity would be impossible, (Markman and Wisniewski 1997).

Conversely, the ability to respond to ‘difference’ enables us to distinguish between categories, and to place our focus on details. For Bateson, ‘difference’ was an essential part of a cybernetic epistemology. “A bit of information is definable as a difference which makes a difference” (Bateson 1972:315). It belongs to the realm of cybernetics because, in Bateson’s view, creatures had to be able to interact, or exchange information between themselves and the environment in order to adapt and survive. Such information was for him, news of difference. One of the passages which best explains

\(^5\) Question 2.
A) How are apples and oranges different?
B) How are apples and oranges the same.
Bateson’s thinking about systems, interactions, mind and the importance of difference is from his musings on where ‘mind’ begins and ends in systems.

Consider the blind man with a stick. Where does the blind man’s self begin? At the tip of the stick? At the handle of the stick? Or at some point half way up the stick? These questions are nonsense because the stick is a pathway along which differences are transmitted under transformation. (Bateson 1972:318).

With question 2, I attempted to explore this aspect of people’s information processing. The questions themselves were very simple. The small number of answers were complex and informative, often showing that my collaborators oscillated between using the perceptual filters of sameness and difference, whatever the wording of the question. Two of my interlocutors used their sense of taste when asked for the differences between two fruits.

J (…) How are apples and oranges different?

Beatrice: They’re fruit. Sorry...

J. What do you do before you say that?

Beatrice: I recognise one as being an apple and the taste of it, and you can use it for baking.

Here she immediately accessed the category ‘fruit’, so I asked her what processes she had used to make that decision, to which she replied that she ‘tasted’ them. Ina gave a similar response, saying she could tell the difference because she was experiencing the taste of the apple. I continued to question her about how she thought she made these distinctions.
J. When you say you recognise one, is that because you make a picture of it out in front? Or how do you know it’s an apple you’re talking about?

Beatrice: You know it’s an apple from previous experience of seeing an apple. I suppose you make a picture of it as well. A picture of different possibilities and things you know about it. (Here she seems to be searching for information she has stored about apples. She may be thinking of the object ‘apple’ as a class rather than an individual ‘thing’.)

Edward’s response was to imagine the two fruits together when I asked him about their differences. First, he produced one picture. When I asked him about similarities, he reported conceiving of two pictures.

Edward: I have a picture with apples and oranges in it.

J. Static?

Edward: Yes, ehm...

J. What are you paying attention to?

Edward: I’m actually paying attention to the apple and the orange but there’s no colour in the picture.

Later, when I continued to ask him about the similarities, he volunteered the following information, showing an oscillation between the two perceptual processes. One was to focus on difference, then on looking for similarities.

Edward: Ah, that makes me search, now I have two pictures and I am comparing one to the other, looking for sameness. Interestingly it makes me see the differences.
In Lucy’s case, ‘difference’ caused her to search for detail.

J. So if I said ‘How are apples and oranges different, what do you do on the inside?’

Lucy: The first thing I thought of was visual, it was the colour, the colours, the texture, the skins that I’m seeing obviously, first, and then I suppose that would probably bring me down to the more specific thing to the seeds, what has seeds, what doesn’t, how they grew, how they do taste obviously, and the smell,

In the last paragraph above, she also shows the oscillation between thinking in terms of a class, (what has seeds, what doesn’t) or of specifics, (How do they taste and smell.)

Ina’s responses to the question about differences was to evoke the taste of the two fruit, to focus on the sensory specific information coded in her internal representation.

J. [...] How do you respond if I just ask you ‘How are apples and oranges different?’

Ina: (pause), a sweet apple and a bitter orange.

J. How do you know?

Ina: I taste them.

J. So the first thing that comes is the taste?

Ina: Yes. (...) And then, colour.

Even this fragment demonstrates that using awareness of different logical levels in a text as an analytical tool can yield insights into some of the ways in which people process information. People can
oscillate between using abstractions such as categories, or access the sensory specific information coded in terms of the senses internally. There seems to be a distinct ‘gap’, as it were, between the many internal processes that I have attempted to explore, and the wording, or languaging of people’s interior worlds. It thus appears that asking people to think about similarities, or differences, may generate two different kinds of internal responses. In one, conceivers tends to focus more on sensory detail, in the other, the focus moves towards abstracting the information to the ‘higher’ logical level of class or category.

9.5. Conclusion

This chapter considered that some words may have the ability to evoke different kinds of internal responses. These may shed light on the processes that are used in the construction of conceptual structures. In this chapter I have looked at how some words seem to have the ability to direct people’s attention internally in different ways, as well as how they may act as categorisers for the subsequent information. Often such words come at the beginning of statements. Other kinds of syntactical structures, such as negations, appear to achieve the opposite of what is intended; asking someone not to think of something inevitably brings that ‘something’ into the conceiver’s internal focus. Some of the material in this chapter adds to the information about internal representations and sub-modality changes.

Lastly, I considered what was essentially a fragment of my interviews, where I was attempting to explore what happened when we directed people to think of similarities and/or differences. Although the information here was sparse, one can hypothesise that there may be ways of guiding people towards attending to specific detail, or to the higher categories obtained through abstraction.

It could be that approaching textual analysis with an awareness of logical levels enables the researcher to track the movement of
people's thinking between more detailed, specific information which is coded by the senses, and the abstractions which appear to be such a necessary aspect of people's conceptual models with which they map their worlds. These present yet another aspect of connections, which I have already suggested are fundamental epistemological processes, and are embedded in language structures. Here however, the connections are between specifics, and perhaps untold layers of abstractions. The ubiquity of trans-derivational searches suggests that this may also be a process whose functions deserve further investigation. They appear to be dynamically linked to internal dialogue. This sheds some light into the roles of inner speech.

The last four chapters were a report on the results of my own interviews. My interview schedule was designed to elicit information from other people's deep introspections. In an epistemological sense, I was asking people to direct their attention as much as seemed feasible, to some of the finer details of their own internal worlds. As a phenomenological inquiry, it demonstrates that we seem to use our senses internally to code and re-create experience. I suggest it also demonstrates that internal representations are a metaphorical 'layer' of consciousness whose exploration yields insights into some of the processes that we use to make meaning. I present a fuller list of these processes, and a model of their possible interactions, in chapter 11.
Chapter 10. The Master Practitioners’ Interviews; Teaching and Learning as Transformational Processes.

Choose a friend before you choose a journey, and a neighbour before a home. (Old Arab Proverb).

For the naturalist, ... the term “design” designates nothing more than a broad plan relating to certain contingencies that will probably arise, but the precise nature of those contingencies is unpredictable. It is anticipated that the design will change as those contingencies are realised, (that is, made real or constructed by the inquirer interacting with circumstances that have evolved). (Lincoln and Guba 1985:259.)

The map is not the territory. (Alfred Korzybsky, 1958).

10.1. Introduction

In this chapter I introduce and describe the second phase of information gathering for this inquiry. It reflects another approach to the inquiry. In the last four chapters my gaze was directed mainly on the minute specifics of people’s internal representations and their sub-modality changes, as the result of listening to language structures. In this chapter, however, I look at the complex abstractions my collaborators had about learning. These can be thought of as generalisations that operate at ‘higher’ logical levels than those of internal representations, (Bandler and Grinder 1975).

The material on which I base my analysis and reflections in this chapter was obtained from the second phase of information gathering, from interviews carried out by two of my assistants. These were briefly mentioned in chapter 2. Here I consider some of these students’ changes about themselves as learners, after participating in the NLP course. I also suggest that what is constructed as the result of a teacher’s approach, has consequences for both people’s internal representations and future actions. These may all be considered as
active parts of people’s cognitive maps. I then explore the possibility that teaching modes can also directly influence the kinaesthetic or physiological responses of learners, (as well as influencing the construction of their internal models). I also give consideration to some of the issues relating to collaborative inquiry. I conclude with some reflections on the potentially transformative nature of teaching and learning. These findings are entirely from the tapes and transcripts of this set of interviews. They were carried out after I had left the country. The conclusions I offer below are speculations and hypotheses that resulted from my reflections.

10.2. The background to this part of the inquiry

My research had developed into two separate data gathering phases during this two-month stay in the Middle East. The first of these was my own interviews, whose transcripts form the basis of my analysis, which became the main material for chapters 6 – 9. This chapter, however, is about a second set of interviews, which were carried out and tape-recorded by two of my three assistants, ‘Edward’ and ‘Harry’.¹ These interviews were carried out after I had left the country. The tapes were sent to me, and I then transcribed them when I had returned to the UK. To reflect on this stage of the inquiry I use a more generalised approach in the analysis of my own transcripts.

Such an approach has been described as phenomenographical (Barnard, McCoster and Gerber 1999). It seeks to provide a descriptive analysis of collective meaning, and aims for a commonality of understanding. “The emphasis is on how things appear to people in their world and the way in which people explain to themselves and others what goes on around them, and how these explanations change.” (Barnard et al 1999:214). This part of the inquiry is still phenomenological; it seeks to describe some factors that may be

¹ The names have been changed to ensure anonymity.
involved in the construction and re-construction of people's cognitive maps, and thus also in the processes involved in learning. Anderberg (2000), investigating the experiences of learners, has raised the question of how personal understanding is linked to language meaning, and states that "little is known about the character of the relationship between word meaning and understanding, how it develops or what role it plays", (Anderberg 2000:89). This chapter is also an attempt to consider some of these issues from another vantage point.

The two people carrying out these interviews had assisted me as co-trainers on the NLP course, and were themselves experienced in teaching and applying NLP. This chapter contains many of my own thoughts and analyses of their interview transcripts, and then some tentative conclusions about the potentially transforming nature of teaching.

Another aim of this chapter was to explore the application of Bandler and Grinder's (1975) meta-model of language as an instrument for the textual analysis of these transcripts, and to acquire some notion of its usefulness as a tool for understanding the subjective experience. One of the main foci was on how the participants on my course had constructed (and perhaps re-constructed) the notions of change and learning. These insights could also shed more light on to some of the fundamental epistemological processes that surfaced in my own interviews. What emerged was that when people construct abstractions about their experiences, they appear to form a complex web of links, around such nominalisations as 'learning', and 'failure' (almost as if the nominalisations acted as the metaphorical nodes of a conceptual web). The interviewees' transcripts showed that changes had occurred in some of their apparently deeply rooted constructs which they had built about themselves as learners. Many aspects of these had changed. There had been alterations particularly in the connections and generalisations, which formed a part of the 'internal' architecture of their constructs.
Sometimes these changes were dramatic, sometimes only slight. However, all the participants in this part of the data-gathering phase showed some changes in their approach to learning. This chapter is also about addressing the question 'what changes when people's constructs change?' These transcripts hint that what happens when conceivers change some of their concepts about learning at higher levels of abstraction, then changes in people's internal representations about their experience of learning also occur. I include a short review of this aspect gleaned from this series of transcripts. This leads to the possibility of using this approach for the analysis of texts and spoken discourse.

10. 3. Collaborative inquiry.

Both 'Edward' and 'Harry' had been students on previous NLP Practitioner courses I had run at the hospital. We had started the 2000 course with three assistants, but one of them chose to withdraw from the venture because she was busy organising her return to the UK. The remaining two were also keen to increase their skills, so it was agreed that their assessment for upgrading from Practitioner to Master Practitioner would be threefold; to assist me with the Practitioner Training, to attend both the Practitioner and a Master Practitioner course, and to carry out a modelling project which involved them in interviewing the participants on the practitioner's course to find out more about learning. (Such modelling projects are standard practice for many NLP courses). They gave their permission to use their tape recordings for this part of my inquiry.

This part of the research was collaborative. Patton (1990) describes this as the professionals and non-professionals becoming co-researchers. He suggests that it is suitable for a heuristic inquiry, where the central question is "what is my experience of this phenomenon and the essential experience of others who also
experience this phenomenon intensely”? (Patton 1990: 71). Both the interviewers and the interviewees had shared the experience of participating in our NLP course. Such collaborative phenomenological inquiry can be said to be more heuristic, because, according to Moustakas, it “refers to a process of internal search through which one discovers the nature and meaning of experience, and develops methods and procedures for further investigation and analysis,” (Moustakas 1994:17).

The topics for their interviews emerged from one of our evening workshops; both Edward and Harry reported interesting changes in their own thinking as the result of developing more understanding of their own conceptual processes through using NLP as an analytical tool. According to Lincoln and Guba (1985), one of the hallmarks of naturalistic inquiry is that the design emerges as the research develops. This was certainly true for this phase of the research. This chapter emerged from what originated as an assessment exercise for the Master Practitioners. I have stated before that, at the time, I believed that this phase was only to be a pilot study, so it will be incomplete.

I was also curious to have some feedback from participants about the effectiveness of my own approach as their trainer and facilitator, as part of my own professional development. Phelps and Hase (2002) point out that reflexivity is integral to the notion of action research “which might be defined as a mental process in which one thinks about things by going back over them.” (Phelps and Hase 2002:516). As Reason and Marshall have pointed out, qualitative research is also a personal process “for people to make sense of and act effectively in their world” (Reason and Marshall 1987:112). The case for reflection on practice, according to Burchell and Dyson (2000) has already been extensively argued. Leitch and Day (2000) propose that such reflection should be a part of teachers’ development.
These transcripts were to illuminate my own practice as a trainer, and lead to deeper reflections on the nature of knowledge construction.

10 4. Issues of power and bias

Power is believed to be an ever present factor between different groups working within the same organisation. Kincheloe and Maclaren (1988) warn that the issues of the potential power of one person over others have political repercussions if not recognised and addressed. Often, power relations are unrecognised, so that an unspoken status quo is maintained between dominant and subordinate groups. At this point the question emerges: what were the power relations between my collaborators and myself? Mullins (2002) distinguishes between a number of different power relations in the context of business, based on the means by which members of the organisation comply. These include coercive, remunerative and normative power. He links power to the types of involvement those members of ‘subordinate’ groups experience. He develops this typology further by distinguishing between different kinds of involvement, such as alienative involvement, (where coercion may feature), calculative involvement, (where financial rewards are incurred) and moral involvement, which is when everyone shares the goals and aspirations of their group.

Bateson’s (1972) anthropological work had led him to propose that there were two kinds of relationships between people. These he called symmetrical and complementary. In symmetrical relationships power and resources are apparently equally shared. In complementary relationships, deference is shown by one of the parties to the other. One interpretation of this idea of Bateson’s is that in complementary relationships, one party is the gatekeeper to resources, (actual or imagined) which the other may need. Power thus becomes linked to the availability of resources. My own position was that of someone who had been asked to spend two months in the country to teach NLP. In the financial and remunerative sense, the two assistants who had organised my trip were also my leaders. Without them I would
not have been able to give the course. They were responsible for it’s financing. They also organised visas, recruited students and arranged the teaching rooms. They had thus made the whole venture possible, and wanted to be involved as assistants so as to learn more. In the context of my research inquiry, there was enthusiasm for the idea, and a sharing of a common goal. This is close to Mullins’ (2002) notion of normative power with moral involvement; this approach predominated in our work together. Using Bateson’s model, our relationships were mutually both symmetrical and complementary; we seemed to be equals in our enthusiasm for exploring NLP, yet mutually complementary when I was the one with the power of certification, and they had the power of discontinuing my work in the hospital.

Thus power was, from my perspective, something that we shared; I was dependent on them for training fees, accommodation, and the logistics of obtaining visas etc. They were dependent on me for their further learning, certification, and willingly engaged with my work. In retrospect, (from my perspective) our relationships were mostly reciprocal and balanced; as far as possible we proceeded by consensus. The only times I imposed my own views was in the choice of what was taught on the course, and the exercises that would be used. For me, there was some calculative involvement, as the fees were welcome. It was not, however, the overriding factor, which was our common commitment.

Naturally the question of bias has also to be addressed in this context. Olesen (1998), writing from the perspective of feminist research, has pointed out that concern with bias has been “a long standing criticism of qualitative research”. (Olesen 1998:314). She also maintains that the researcher should be reflexive about her views, and be sensitive to hidden factors that might be experienced as oppressive to her participants. It is certainly true that NLP has a particular culture and an approach to its practice, and is in a sense hierarchical, in that there are different levels of certification reflecting different levels of
skill and understanding. The level of certification can influence people’s earning power, should they wish to use it professionally.

Doubtless both my assistants were keen to acquire more advanced certification. I had made a clear distinction between their modelling project, which was the ‘homework’ towards their certification, and my research, which was my analysis of the language structures in the transcripts of their interviews for their assessment. Bias is always present in qualitative research. Both these collaborators told me that they were very motivated to learn more about NLP. If there was bias, then it manifested itself in the amount of information they enthusiastically sought, and the lengths of their own interviews. My judgement of these two assistants was that they were the sort of people who were genuinely able to say ‘no’ if they thought a request unworthy of their time and expertise.

Addressing the issues of bias, Olesen (1998) also suggests that the researcher should view her biases as her resources, provided she is sufficiently reflexive about her project. I am aware that my data gathering was enormously helped by the enthusiasm of my collaborators. I believe, as a practising trainer, that the state that I create in my students has a powerful influence on their motivation. Some trainers in the NLP world generate a state of great enthusiasm in order for their clients to pay for further courses. So there is always, when working as a freelance trainer in this field, a tension between generating the enthusiasm that, in my experience, motivates people to engage in learning, and the need not to close down future opportunities for further earnings. “We cannot rid ourselves of the cultural self we bring with us into the field”, quotes Olesen (1998:314). Enthusiasm may be a double edged sword; on the one hand it is a strong motivational state, on the other hand it can influence the approach of researchers to their task, influencing what is and is not attended to. From my perspective, the bias of my assistants and fellow interviewees resulted in far more information
from them about the interviewees’ processes than was strictly necessary for their assessments.

10. 5. The Master practitioner’s modelling project

The assistants and I developed a rather ‘loose’ interview schedule for this phase after some discussion. I list the topics that were decided on below. Because this was originally thought of as part of a pilot study, I had not anticipated the wealth of information that was more than sufficient for such a phenomenological inquiry. Harry chose to follow the schedule quite closely, whereas Edward tended to follow his own lines of inquiry. Both people contributed new and different perspectives to my own narrower lines of inquiry. Lincoln and Guba (1985) point out the importance of balancing multiple perspectives; that in the post modernist world of human research, there is no one overarching truth or theoretical viewpoint, but rather an embracing of a multiplicity of perspectives. This is also coherent with a systems or cybernetic viewpoint; that within a system there must always be many different perceptual positions. “In soft systems – which includes most human activity systems considered at a level higher than that of physical operations, there will always be many possible versions of the system ... and system boundaries and objectives may well be impossible to define,” (Checkland 1981:165). This was also Bateson’s viewpoint (Bateson 1972). Reason proposed that the process of collaboration roots the individual within a community of peers. He urges the development of such communities of co-operative inquirers, (Reason 1998). These collaborators’ projects provided me with an extraordinary wealth of information which I would not have achieved working on my own.

This raises the question of whose research was this? In a collaborative effort, everyone makes a contribution, some more than others. My own contribution to this phase was to guide the development of the Master Practitioners’ skills to an appropriate level of understanding of NLP in order for them to carry out their assessments, one of which
was the interviews. My own work was to transcribe their six interviews, each of which was about an hour long. The material was contributed by the dedication of my collaborators; the transcriptions, reflections, analyses and extrapolations are, however, my own.

It is important to remind oneself sometimes that the research process is never tidy. Cook (1998) has written about the importance of 'mess' in action research. Lincoln and Denzin state that "all texts are personal statements" (Denzin and Lincoln 1998:413) so in a sense what I have written are my insights, sometimes remaining in the process of formation, though enriched by the generosity and work of the others. "There are no objective observations, only observations". (Denzin and Lincoln, 1998:24). In the post-modernist world of qualitative research, "no single method can grasp the subtle variations in ongoing human experience" (Denzin and Lincoln, 1988:24).

This argues for the validity of using multiple perceptual positions to investigate human experience. "The age of value-free inquiry is over," wrote Denzin and Lincoln (1998:24), so it becomes impossible to claim impartiality in an inquiry. The collaborative phase of this research was not originally planned before my visit; it emerged during the time I gave the course. Having myself devised an interview schedule that inquired into people's internal representations, it seemed a natural progression to explore what was happening at some of the 'higher', (or more complex) levels of abstraction in the students' cognitive processes. This was an aspect in which I was most interested in when studying the Master Practitioner's interview transcripts.

Lincoln and Guba stress that in order for researchers to develop their inquiries, "there must be frequent, continuing, and meaningful interactions between the investigator and the respondents or other objects of investigation" (1986:107). They urge that there are compelling reasons for conducting inquiry in ways that "maximise
rather than minimize the investigator’s interactions”, (1986:107). This was certainly the case during the time of my visit. In a course of 90 hours, spread over two months, there were many opportunities for students, assistants and trainer to interact and develop greater insights and understanding. This happened both within the formal ‘classes’ and in many informal talks about NLP in general.

I did not really know what was going to emerge from the Master Practitioners’ interviews until I was back in the UK and had transcribed, then read the transcripts several times. Only then did patterns of people’s thinking emerge, and I began to note aspects I thought significant. What the short collaborative phase of this inquiry contributed to the work I was doing was a variety of different perceptual positions, a feedback mechanism for my own teaching practice, and a rich source of information about other aspects of people’s cognitive maps at levels of abstraction which were different to the ones my own interviews had concentrated on.

These are some of the questions that initially emerged when we were discussing the Master Practitioners’ interviews. They originally formed the guidelines for their inquiries.

- Why did the student decide to do the course?
- What did he or she think they would achieve?
- What do they think they will achieve now that they had done the course?
- What did they think was different about the course?
- What did they think was different about the way they learned?
- What has changed about their ideas about learning?
- How do they think they may have changed as individuals?
- What are the sub-modality differences between their memories of previous experiences of learning, and that on the NLP course?
It was agreed at the time that the three assistants would interview all ten of the participants separately. However, because one assistant did not carry out these interviews after I had left the country, the two remaining ones only carried out six interviews between them. The expatriate community in some Middle Eastern countries is not stable; people are always coming and going in a politically uncertain world. The sampling for these interviews was therefore somewhat random, yet limited to those who had attended the course. It depended on who was available within the time frame that we had agreed on.

Whereas my own interview schedule was very tightly designed, so that everyone was asked the same questions, I encouraged these two collaborators to use the opportunity to engage in their own, rather 'looser' explorations. They used what we had agreed on as their guidelines, to which they mostly kept. Occasionally they would ask a more spontaneous question. These interviewers knew their interviewees well; most of them were colleagues in the hospital, and had also been coached in NLP by them. The ex-patriate community of the country also met frequently on social occasions, which had to be meticulously planned in order to avoid the religious police, who saw any social contacts between men and women as unlawful, and often punishable by imprisonment and/or expulsion from the country.

The Master Practitioner's interviews were carried out in the context of friends interviewing friends, whereas my own interviews were more that of the teacher interviewing her students. Both shared my approach to teaching as essentially facilitating the emergence of our learners' own insights and constructs, and that teaching and learning should be interesting and amusing, driven by curiosity and exploration. Whether this worked in practice can only be established by a post-course evaluation, which was also one of the aims of this phase.
10.6. Reflections on using a phenomenological approach

After transcribing the tapes of these interviews, I read through them, and four main themes emerged. In this part of the process, I tried to remain true to the phenomenological use of Epoche, where, according to Moustakas, “we simply let what is there stand as it appears, from many angles, perspectives and signs” (Moustakas 1994:86). He further encourages the seeker to use the Epoche in such a way that “only what enters freshly into consciousness, only what appears as appearance, has any validity at all in contacting truth and reality” (Moustakas 1994:87). In reality however, I found that my own fascination with other people’s processes of learning was directing me to pay attention to certain contents of the transcripts, and not to others. So what I offer is not the result of an idealised process of Epoche; rather of what happened to me when “our consciousness is directing us meaningfully towards something that continues to remain present however much we may turn inward to our internal experience” (Moustakas 1994:91). Giorgi proposes that phenomenology is “the search for essences”; (Giorgi 1985:43) What emerges as the essences of learning from these interview transcripts are essences which are very much influenced by my own interests.

This is a stage which has been described by various phenomenologists as reduction; Moran (2000) cites Husserl’s belief that “reduction provides the only genuine access to the infinite subjective domain of inner experience” (Moran 2000:147). He posited that reduction was the first acts in laying bare the essences of experience. “Through the phenomenological reduction we strip away the actual character of the experience and grasp it as pure phenomenon (Moran 2000:150), thus discovering the “correlates of consciousness”. Georgiou further proposed that it was the phenomenological psychologist’s role to uncover the invariants of the phenomenon, because “a description of the invariants constitutes their essence” (Georgiou 1985:50).
I have also used a Batesonian and Korzybskian framework in arriving at these reflections; Husserl's 'essences' seem to me to be essentially abstractions of a higher logical level than that of description. It appeared fitting to use Bandler and Grinder's meta-model, which is essentially about the structures and epistemological processes that reveal themselves in syntactical structures when information is assigned to language. NLP may show itself to be a useful adjunct to phenomenological inquiry, because using it has enabled me to uncover some information, which is new. I hesitate to claim that I used the idealistic stance, which holds that one should suspend one's own patterns of thinking. Maykut and Morehouse (1994) state that the hallmark of phenomenological inquiry is the "discovery of propositions by observation and the careful inspection of patterns, which emerge from the data," (Maykut and Morehouse 1994:13). What follows is from my own careful inspection of some patterns that emerged from transcribing and listening to the transcripts.

10.7. Some patterns that emerged from the Master Practitioners' interviews

My two collaborators' interviews had been thorough. They presented me with a wealth of recorded discussions and reflections around the themes we had agreed. Several aspects seemed to 'jump out' when I listened to the tapes, and then read and re-read the transcripts. I have chosen to elaborate on five such patterns. They also form some of the bases for my model of teaching and learning which I explain in the next chapter.

1. The power of the theme of failure.
2. Changes in people's beliefs about learning.
3. Changes in their views of themselves as learners,
4. Changes in their views about their own abilities and future activities.
5. The apparent links between what happens at higher logical levels, and to the internal representations and sub-modalities of the conceiver.

10.7.1. The demon² failure; a nominalisation with power

The power of the idea of failure in the context of the individual learning something new emerged as a significant aspect in many of the transcripts. The participants seemed to have been aware that the people teaching the course had avoided mentioning failure when teaching the course. Cannon (1999) has observed that people's memories of failure are accessible, vivid and painful. "What was found to remain well remembered years after a failure experience is the anger, the sadness, the surprise, the self-criticism – processes more reactive than thoughtfully reflective," (Cannon 1999:435). Seegeors and VanPutten (2002) propose that how students access previous experiences of a subject is crucial to their current approach to learning. Those whose fear of failure had brought about a sense of their inadequacy performed less well. The following extract from the transcript of Lucy being interviewed by Edward in which she reports her own experiences of the course, eloquently illustrates the associations that 'being wrong' had once had for her own approach to learning. Edward had asked her why she thought learning had been easier on the NLP course.

Lucy: Another word, another word... well there's no pressure to learn, your mind was open, you weren't right and you weren't wrong. That's probably the big thing. You weren't going to fail no matter what. So it just was like whatever, we had free range to do something or interpret something that we wanted to, there was no right or wrong answer, which takes a lot of pressure off learning.

² I use the term 'demon' in the sense that Chambers' (1959) Dictionary gives, as something that exerts an influence on people, or possesses them.
If this extract is examined for the conceivers’ complex equivalences, then what emerges is a pattern of connections between the ideas of ‘pressure’, being ‘right’ or ‘wrong’, and ‘failure’ that had been created through previous learning experiences. In a cybernetic sense, there is no ‘right’ or ‘wrong’, there is only feedback about the extent to which a system is achieving a goal. What was also noticeable from this set of transcripts was that there were changes in people’s conception of learning when ‘failure’ was removed from the metaphorical ‘road map’ of their own learning processes. If we then look for cause-effect patterns in this extract, then what is noticeable is that Lucy implies that she experienced herself to be ‘at cause’, an active agent in charge of her own learning processes. Could this have been the result of her changing views on the nature of learning, and herself as a learner? The experience of being ‘at cause’ is what Bar-Tal (1984) describes as experiencing the locus of control as being within the person. In the same interview, when asked for some her beliefs about learning, she elaborates:

Lucy: Well the main learning curve for me like I said was that failure’s not wrong, you’re learning. That was probably the biggest eye opener, biggest eye opener, and probably the tenses of words, ... belief?

Belief? Probably the biggest belief for me would be that one. The belief...

Then Edward pressed her for more information about her past notions of failure.

Edward: What is it about failure though, that has, or had such a strong impact on you personally?

Lucy: Well I suppose you’d feel a bit of a loser, wouldn’t you.

Edward: So is this your identity?

Lucy: Yeah, it would be.
Here there appears to have been a 'loosening' (as it were) of the connections between the complex equivalences linking four main elements of the construct: failure, being wrong, experiencing herself as a loser, and learning. These appeared originally as almost 'welded' together in her original model of learning. It is as if all these entities inhabited the same 'mental space', to borrow a term from Fauconnier (1994), and were somehow blended together. What I think Lucy implies, in this passage is that there has now been a casting out of the 'demons' of failure, wrongness and loser from within the complex of abstractions she assigns to her construct of herself as a learner. These 'demons' seem also to have been a part of her identity. In Bandler and Grinder's approach, there has been a disconnection of an original complex equivalence, and a re-connection to other conceptual entities such as movement, possibility, and the emergence of new beliefs about herself as a learner. Such connections may have a powerful role in the creation and re-creation of meaning.

This is implied in the following extract, where Edward is exploring some possible shifts among Lucy's complex equivalences. Edward is using a model from Dilts (1998), which separates Identity from Beliefs, Values and Capabilities as different logical types. Dilts (1998) also proposes that how Identity is constructed is crucial for the healthy functioning (or otherwise) of the individual. Dilts believes that Identity occurs at a higher logical level, though I am uncertain of the validity of this claim. It is nevertheless a useful model in the purely instrumentalist sense; I had used it on the course as a tool for people's self-exploration. In the next extract she appears to have re-organised the construct to one including moving on and learning.

Edward: Did you still have that feeling that failure was not good?

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\(^3\) Dilts (1998) believes that we operate at 6 different levels, which he lists (going from the most abstract to the least abstract) as Mission or Spirituality, Identity, Beliefs and Values, Capabilities, Behaviour and Environment.
Lucy: Yeah, yeah.

Edward: And now that’s moved?

Lucy: And now that has moved.

Edward: So that’s moved from Identity to where?

Lucy: That’s moved, beliefs... I’ve probably just learned,... I don’t know, It’s a belief about yourself, that it’s not failing, you’re moving on, you’re learning.

This extract also shows the lost performative ‘not good’ linked in to the web of connections she had originally built up about failure. So within the abstract complex that is the nominalisation failure, there are infra-structures, as it were, which, when altered, result in the emergence of new meaning, and even new approaches to future events, which is also shown in some other extracts below.

In Harry’s interview of Kathleen, she reveals an interesting complex equivalence about her conceptions about learning on the course. She describes it as ‘safe’, because there was no ‘wrong’. The word ‘safe’ is also a lost performative; as with the word ‘wrong’ it demands that a judgement has had to have been made against a ‘scale’ before its utterance was possible. 4It would have been interesting to inquire further into the ‘safety issues’ for this respondent. When asked what was different about her experience of learning on the course, she replied:

Kathleen: I suppose that ... we were allowed to learn and explore, we didn’t... there was no teacher centred at the top of the class saying... with a ruler pointing out, which is what I still have in my image of teachers at school, and I suppose any course I have done since, like

4 I have written about scalarity as a possible epistemological device in Chapter 4.
including nursing and management, all these courses, there’s your lecturer at the top of the class and you sat and you listened and you took notes, and this course we were very much encouraged to participate and explore, ask questions, and we were always told from the beginning that there was no wrong, like there was no wrong, once, we were safe. (My emphasis). That we could explore, we had a free run, and I think from day one none of us were frightened to ask questions, we were never like slapped down and told ‘no that’s wrong, you know, that’s ridiculous’ we might be told that something was more correct... it was an exploration. There was a lot of self-directed learning in it as well.

It is noticeable that she reported differences between the internal representations of two separate experiences she had had of learning. In this passage there is an implied cause-effect pattern as well. This can be summed up as *if not wrong, then safe*. This text also implies that with the type of learning which was associated with exploration, and not being either right or wrong, Kathleen also showed a shift to a more internal locus of control. It is interesting to note how many of these epistemological processes appear to interact with each other; I explore this further in the model of learning I suggest in Chapter 11.

Edward’s interview of Steve indicates some of the power that the nominalisation ‘failure’ had for him, implying a strong link between that and his views of his own abilities, as well as the construct of his identity or self. Here there is a complex equivalence between ‘I’ and ‘failure’. Dilts suggests that maladaptive constructs about the self can be potentially insidious in their effects. These kinds of structures, where the concept of ‘I’ is linked to that of ‘failure’ seem to act in a way akin to categories, influencing both their action and perception. (I have written about the process of categorisation, and its possible effects on thought and perception, in chapter 3). When Edward explored some of Steve’s views of his past experiences, which were originally assigned to the complex nominalisation of failure. Steve’s answers are interesting because the text demonstrates that there has
been a re-framing, a re-categorisation of past experience where there are no longer the links between the constructs of 'failure' and 'self'. I have underlined what I believe to be the significant part of the text in which this is implied.

Steve: I have been successful in most endeavours that I have undertaken, I haven’t ... I suppose I really haven’t had a conscious strategy for achieving outcomes of different kinds in many areas of my life, I suppose I believed that I was a failure or that I had failed, certainly, and I think NLP has given me the ability to see things from a different, a different perspective, many different perspectives, really, I suppose.

I suggest that this indicates the strength of the internal architecture of the nominalisation 'failure'; these people all reported, in their own ways, that they had abstracted from 'being wrong' in a learning situation, to the higher level of identity.⁵ This seems to be operating at a higher logical level, constructing answers to questions such as 'who am I?' Steve reported how some of his beliefs about himself and his abilities had been set through his earlier experiences of learning mathematics:

Steve: [...] if a teacher at school told me that I was doing maths, meaning the ordinary level and not honours, I would consider myself not capable of doing.... I would have considered myself not capable of doing honours maths. Now I’m twenty eight I look back on the honours maths course and I can do it in my head, I can’t believe that I... I just can’t believe it, you know, because I had a limiting belief that was set by somebody else actually, you know.

If we take the cybernetic view, that systems run on information in the forms of calibration and feedback, then the power of believing oneself to be a failure, the fear of being 'wrong' must influence how people

⁵ Thus I = wrong.
approach tasks, and also how many of these may be thought to be within the concever’s abilities. Many of the participants reported setting new goals for themselves as the result of the course. This indicates that their perceptions of their own futures had also altered in some ways. I return to this aspect later in this chapter.

10.7.2. Learning about learning

Another set of complex equivalence that emerges from this passage were the links between the notions of self directed learning, pro-activity, choice and exploration. This is a different complex from the other kind of learning that Kathleen, for instance, reports on, where there are links between passivity (sitting and listening), being reactive (taking notes) and essentially having to receive what is given with very little choice in the matter. When asked to elaborate on what she believed were the key differences, she makes an interesting link between being allowed to learn something in her own way, and being conscious of an increase in her ability to retain information. Here she describes her reflections after the course had finished.

Kathleen: We were all allowed to learn in our own different ways. We weren’t learning in the lecturer’s... we weren’t... we didn’t have to learn how the lecturer wanted us to learn something... we were given the information, and what we did with the information was up to us. We were allowed to explore with that information.

Harry: Have any of your beliefs about learning changed?

Kathleen: They have, yeah.

Harry: In what way?

Kathleen: I suppose I used to... my method of learning was I suppose to recite things off and off and off, learn it like a pole (sic) and I suppose a lot of that information doesn’t stay with you long term does
it, so ... with the NLP, that because I could explore the information for myself, was encouraged to explore it, that I've retained an awful lot more of that information without actually having to sit down in front of the books and rattle it off over and over again, forever and forever. So I suppose, ... that method of learning I had has gone now. I don't believe that that method of learning was a good one. This experiential learning is definitely...

Ina also discovered that learning could be something that happened without her being aware of it. When Harry asked her about what she had experienced as different about the course, she replied:

Ina: (pause) just the general talking, exchange of a lot of information, and every opinion, everyone's view on something was almost similar to yours, or that you already had similar feelings to that person, if you know what I mean, it was like we were connected, we were totally connected, it's like you would sort of sit there and go 'oh yeah, I felt that, I saw that' so it was very comfortable, it was learning when we didn't feel that we were learning, (my emphasis) it was more like we were sitting in a group discussing things...

The idea that learning may involve unconscious processing also emerges from Steve's interview. His responses to Edward's questions about what he had experienced as different in the NLP course is illuminating, because here again new patterns of complex equivalences about learning emerge. Now it seems that learning can take place without the learner being aware of it. He describes the process as sometimes emotionally draining when asked about his reactions to the course.

Steve: It was at times very very draining, emotionally and psychologically draining because of all the Ericksonian type magic she
was using\textsuperscript{6}, she was weaving around the place, em, at times I felt
that I wasn't learning anything, but I was surprised that when I went
home, that I'd look over the book, I'd look over the manual and kind
of go oop, there it is, I know that! So I must say that while I wouldn't
have been aware of how much I was learning, I learnt a lot, an awful
lot more than the things I've done in the past you know that I would
have learnt. (My emphasis) And I mean it seemed effortless,
effortless. (Laughter)

The complex equivalences (and implied cause effect patterns) here
form linkages between learning and unconscious processes. He also
explicitly refers to the influence of the trainer's language structures,
another cause-effect pattern. Edward then inquires more deeply into
what may have changed about his ideas of learning.

Edward: Do you think the way in which you can now learn has
changed?

Steve: Absolutely. Yes. I believe that now I don't have... I suppose
before I had a fear of sitting down, studying and stuff like this
because I felt that maybe it was a waste of time when I could have
used that time to do something practical, and I would have been
afraid that the outcome wouldn't have been as desirable as I want it,
that fear has gone, and now I believe that within certain limits that I
can learn just about everything, anything really, well maybe I couldn't
learn anything, everything, but I'd be willing to give it a go, and I
think that I would use as much of a model of NLP or how J. managed
to teach us, I would apply that to any new methods of learning or

\textsuperscript{6} What I believe he is referring to is the practice in NLP training of what is called
opening and nesting loops. This is a practice much loved and used by Bandler, who
developed it from his time modelling Milton Erickson. It is designed to overcome
Miller's (Miller et al 1960) belief that the conscious mind can only process 7+/\textpm 2 bits
of information, whereas the unconscious may be much more receptive to new
information. By opening and nesting loops, that is, starting a theme or a story, then
another, then another, then closing the third, then the second, then the first, sets up
an unconscious mini-Zeigarnik (Mazur 1996) effect which, as it were, makes the mind
more focused and therefore receptive to the information needed for closure or
'understanding'. It is alleged that it is thus better attended to and remembered
parts of it. It might not all be useful, but certain parts of it I would use.

Steve's complex linkages within his construct of the nominalisation learning indicate that originally he had constructed the nominalisation learning as connections between elements such as studying = sitting down = learning theoretical material = waste of time. The cause effect pattern is shown in his statement that his original mode of studying would not lead to success. It is also associated with fear, a physiological response. The changes in his beliefs are dramatic; not only has the fear gone, but he now believes himself to be capable of learning many more things. In terms of causal thinking, the first kind of learning produced the feeling of not having any choices of his own. The locus of control is experienced as external, and, he uses mind reading as a source of his judgements about himself as a learner.

It is as if the kind of learning Steve experienced on the course may have created new beliefs about himself as a learner. The locus of control has moved to within himself, and his identity as a learner can now be summed up as someone who can learn anything he wants to, and is self-directed. He reported that he now perceives more future possibilities for himself; in cybernetic terms he has experienced having a greater future potential, having generated more outcomes for himself to which he can calibrate. There appears to be a link between his changing construct of himself, and his perception of his own future. This includes the factor of time as an additional dimension in people's constructs.

If we then consider what modal operators are implied within his two distinct constructs about learning, then it seems that he has moved from a position of 'having to', to one of 'wanting to'. There is thus a shift in his experience of the locus of causality. For the conceiver, not only past and present are part of the mental architecture of complex abstractions, the dimension of the future has a real and dynamic presence.
In the extract on page 281, Ina also reported that learning had occurred without her being aware of it, and that the group had influenced this process. This corresponds to Mercer’s views, that learning takes place between people through the exchange of ideas and experiences, (Mercer 2002).

10.7.3. Changes in people’s perceptions of their futures

If the cybernetic view has any validity, then it is to be expected that calibration must be an essential aspect of information processing in systems. Central to the act of calibration is the notion that in order for any behaviour to take place, there has to be, within the system, information in the form of a construct about future events. (Wiener 1965, Bateson 1972). I suggest that my own interviews show that an essential aspect of such constructs is people’s internal representations of future events. They may also act as significant categorisers of information.

One of the aspects of the Master Practitioner’s interviews were changes in people’s perceptions of their own abilities, and therefore what they now perceived as possible for them to achieve in the future. Some of the interviewees reported that they had already changed some of their approaches to their professional activities. These included teaching, and acquiring more professional qualifications. It is perhaps simplistic to suggest that changing people’s constructions about themselves as learners alters their beliefs in their own abilities, and therefore what they now can calibrate to in their own futures. The following extracts bring into sharper focus the notion that our information processing may involve an internal exchange of information between the different time frames of past, present and future.

Ben had been a participant who had initially seemed reluctant to engage in the course. He reported that he had only come on it because his friends were doing it. It took a long time for him to settle
in, and relax with our different approach. In one part of his interview he poignantly describes his associations with the process of learning at his college of nursing.

Ben: Well sometimes I’d take down notes just to … but I wouldn’t like… it would be like if your listening to your NLP you’re writing, you’re listening and you’re writing it down, whereas if I was bored in the classroom I’d be writing it down but I wouldn’t actually have any idea of what I was writing down. I’d be copying or just listening, but as soon as you said what was the last sentence I wouldn’t have any idea because it would be… I’d be disinterested, it would be above my head maybe, so I’d just be going you know cranial nerves blah blah blah, but I could read it the next day and have no recollection of what I wrote down.

I was interested in Harry’s interview of Ben, and in his feedback. Ben had made all of us aware of his resistances to the different approach we took to teaching and learning in the first few sessions of the course. This extract indicates how his views then changed.

Harry: So we’ve established that you are learning differently, I think that you’re learning differently now. Have your outcomes changed? Have your expectations of what you are going to learn changed?

Ben: In… have my…?

Harry: In all learning experiences …?

Ben: I’ve actually become a lot more interested in… there’s a few courses I want to do, I was sort of well yes, maybe. But since I’ve done it I’m actually a lot more interested in making sure I do these courses because I’ve become a lot more interested in learning. (My emphasis).

Harry: Right
Ben: Because I am... I've become a lot more interested in learning, because before studying was because you have to do it to get from A to B sort of thing. I'm quite interested in learning more.

Harry’s interview with Kathleen produced an example of her growing awareness of the power of calibration in something as simple as planning how to talk to a Doctor differently when she was working on the wards. It could be said that she was more aware of how she could use the TOTE process. Here she indicates that she now rehearses an event internally, thus creating an internal representation to calibrate to. This appears to enable her to feel more prepared. When Harry asked her about the changes she has made, she replied thoughtfully:

Kathleen: (long pause) I don’t know, it’s hard to describe, I’m just more confident approaching a situation, ... I’m more conscious of the language I use, because I understand now the effects that your language can have on other people, and how like one word can make so much difference, so I probably run a situation through my head first before I... run a conversation, how I would expect a conversation to go through my head before I actually encountered the situation. (My emphasis).

Harry: Interesting. Are you just running the conversation, your conversation through your head?

Kathleen: No I’m probably guessing their response and have another response for them, especially if it’s a situation where I’m trying to convince somebody, like a Doctor who does not belong to a team and I want him to write up antibiotics or something, I will now approach the situation (indistinct)... I know I’ve done it, run it through my head, I expect them to...

Harry: So you almost hallucinate what you’re actually going to say...
Kathleen: Yeah, I always expect them to turn down my request and I always have a gentle and persuasive argument for them to do it, and I always run that through my head now first. So I suppose I do actually listen to both sides of the conversation and then I’ll go into... it doesn’t always come out like I have previewed, but at least I’m prepared for.

The following extract also indicates that she now perceives her own future differently, both in the personal and professional domains. (She was pregnant at the time of the interview).

Kathleen: I set a goal for myself during the course, on a goal setting exercise, and I still have that goal. It’s actually... a course that I intend to do, and that still is... that hasn’t been put aside. That is going to be done when I go home.

Harry: How are you going to do it?

Kathleen: How am I going to do it? Well it’s just a course, I going to applying for it, obviously because of the baby I’m not going to do it straight away. But I know that, and I’m actually going to apply for the course after a period of time that I’ve set for myself, so that I’m not going to be under pressure with a young child in the house, new job. I’ve set a time period in which I’m going to achieve this goal.

Harry: When you’ve achieved that goal, where do you see yourself going from there?

Kathleen: There’s an area of work that I want to go into that this course would actually bring me on to this area of work. So I look to the course for achieving that goal.

There were many examples of the students in this sample thinking differently about their future as the result of their participation in the course. Three of the six people interviewed in this phase of the
research made life changing decisions about their own futures. Ina, for instance, determined that she would study for a nursing degree on her return to the UK. Both Lucy and Ina were applying what they had learned about communication to their own teaching. When Harry asked Ina what was now different about her own approach to teaching, she replied:

_Ina: And I enjoy my classes, and I know the students that attend enjoy my classes, so I’ve achieved that, they know that when they come to my class it will all be fun, it will not be like something out of a book, or on the board. It will be something that I’m going to get them to be involved, and an atmosphere that is really calming and friendly._

_Harry: And before?_

_Ina: Before it was like go up to the board, ‘this is what you need to learn, this is hospital policy’, this is to protect you, go out there and make sure you practice well and you deliver certain (indistinct), not giving them any leeway._

_Harry: Right. Is that material still present?_

_Ina: Same material, I’m still using the same material, just delivering it differently._

It is possible that having experienced a different approach to teaching, one where the emphasis was on directing conceptual processes through communication, people were then able to change the way they themselves taught, even though the course had not been about teaching, but about the complexities of communication. Ina’s extract indicates her realisation that it was important for learners to feel comfortable, and that ‘fun’ should be a part of her learners’ experience. The main difference in her subsequent approach
to teaching is hinted at in the following extract, where she describes how what she now attends to is different.

Ina: You see, I’m not concentrating on the way I teach, I’m concentrating on the way I’m getting feedback, whether I’m making sense, whether I’m getting through to them, whether they understood me, so I’m more aware of that, whereas in any teaching course you’re always more aware of your style, your technique, (…)

Perhaps the changes that people experienced in their beliefs about themselves as learners may have affected how they subsequently acted, especially those who had a teaching role in the hospital. A simple complex equivalence appears to emerge from this, (which can also be expressed as a cause effect pattern). Changing people’s beliefs about their own abilities may also change their approach to related tasks. This, in turn, can affect factors such as their performance and results. Another participant, Nigel, also reported that he had changed his approach to teaching, by becoming more aware of his students’ responses. Having been asked, by Edward, what had changed about his approach, he replied:

Nigel: [...] , recognising their physiological responses and ensuring you’re giving them the correct … well not that … by being aware of their physiological responses and actually listening to what they’re saying and respond appropriately so they feel they have your support and don’t put them off from new ideas.

It is as if there are a number of inter-related elements (or internal dynamics) in people’s maps which, when one is altered, others are also affected. This is only a tentative conclusion; I believe that further investigation may be needed for more insights to emerge.
10.8. Sub-modalities revisited; the physiology of internal representations.

In this chapter I considered some of this group of interviewees’ changes in their ideas of learning, and themselves as learners. I also explored how using Bandler and Grinder’s (1975) meta-model could shed light on some aspects of people’s constructs. These interviews thus revealed a different order of phenomenon to my own inquiries into internal representations and sub-modalities. However, my two Master Practitioner collaborators were as fascinated by people’s complex inner worlds as I was. It was not surprising then that one of them (Harry), rather enthusiastically pursued people’s sub-modality distinctions in their memories and constructs of learning ‘before’ and ‘after’ the course. Edward was not so interested in this aspect; nevertheless he too uncovered some distinctions.

What emerges from the text of these transcripts are some aspects of the complex inter-connections between people’s internal representations of the nominalisation ‘learning’, and the abstractions that are linked to it. Although internal representations, and the many forms that they take, are of a different logical type to those of abstractions and language, they seem linked dynamically to each other. Every respondent was asked to compare the internal representations that they had of learning something before the course, and after it. I have chosen, for the sake of brevity, to focus more on what people reported about their kinaesthetically experienced sub-modalities, although there were also changes reported in the visual and auditory domains.

Just as there were dramatic changes in people’s models about learning, so there are equally dramatic differences in people’s internal representations. Whereas in my part of this inquiry I concentrated almost exclusively on the effects of language and syntax on this level of subjective experience, what my two collaborators did was to stride out into unknown territory to map some of the correlations between
people’s abstractions and their internal representations. I believe that these parts of the transcripts deserve some scrutiny because of the novelty of these findings. What was interesting was the idea that when people’s complex abstractions change, so do their internal representations, and therefore their bodily responses, even when these were only experienced very subtly. This raises an interesting question; does the way that we are taught actually influence our physiological responses? Does this happen when we remember a past event, or plan the future? One of Lucy’s responses indicates a difference in her physiological state, (her kinaesthetic response) between the two internal representations she has of planning teaching. Here Edward is asking her to compare her ‘before’ and ‘after’ representations of planning her teaching sessions.

Edward: Let’s go back to when you were preparing for this lecture. OK you have a picture. Now what I’d like you to do is to make next to that another picture of how you would have prepared for this lecture before you did the NLP course.

Lucy: Yeah.

Edward: So the two pictures are next to each other.

Lucy: Yeah.

Edward. Now what I’d like to do is to compare the two pictures. Just tell me what the differences are.

Lucy: The one before the NLP is just flat, just flat at the moment.

Edward: What do you mean by flat?

Lucy: It’s just flat, flat.

Edward: Two dimensional?
Lucy: No it’s flat, it’s like a mirror.

Edward: OK. Two dimensional?

Lucy: It’s flat. No real (indistinct) on it. While actually the other one’s all bright colours all happening, ... much bigger, it just seems more clearer.

Edward: What are you doing different?

Lucy: I can see a big smile on my face actually. It’s really weird. It just seems happy, I feel more in control of the ... of the organisation, I feel more comfortable, it’s like I’m given this... I don’t know... something I can use, like... I’m probably actually excited like I’m trying to use it now. I think it’s what this picture’s doing. (My emphases).

In the last extract, Lucy shows linkages between what she ‘sees’ internally, her sense of control, her state of comfort and what appears to be a cause effect connection between her internal pictures, and what she experiences kinaesthetically. Lucy’s abstract constructs about teaching and learning had undergone considerable transformations; here they seem to be echoed at the level of internal representations.

In the transcript of Ben’s interview. Harry interrogates him minutely about his internal representations, which are described in some detail. I give only the extracts about the reported differences in his kinaesthetic modality, although there were also differences in the other senses, such as size, intensity of colour and location of the picture. The ‘picture’ of learning before the course was reported as flat, dull coloured, and small.

Harry: And is there any feelings associated with it?
Ben: Yeah.

Harry: Where are those feelings located?

Ben: Here.

Harry: In the upper abdomen?

Ben: Yeah.

Harry: And do they feel heavy or light?

Ben: They feel like a cloud or something. They just kind of feel like a ball or wind or something. They’re not kind of doing anything, they’re just there.

Harry: Is it warm or cold?

Ben: Just... I don’t think there’s a temperature, just normal.

The internal picture of the ‘after’ was larger, with brighter colours and much clearer. The feelings it generated were also different; one was experienced as kinaesthetically ‘warmer’ than the other.

Harry: Are there any feelings associated with this?

Ben: Yeah.

Harry: What kind of feelings are they?

Ben: Kind of warm.

Harry: Are they located anywhere?

Ben: Yeah, in me stomach.
When Harry interviewed Ina about her representations of learning, he posed similar questions. Again, I give the extracts that relate to her bodily responses, though she had also reported changes in her internal visual and auditory domains. This extract, describing her construct of learning before the course also shows the interplay between internal dialogue and the development of ideas. The feeling that seems to predominate is that of frustration.

Harry: And what are your feelings...

Ina: We’re just sitting there saying, well no, I’m having an internal dialogue actually. I’m saying Oh God I have to finish this course, I have to finish this course.

Harry: And does that give you a feeling somewhere?

Ina: Yeah, a bit of...I wanted to do it but it’s taking so long, I’m just like...‘come on, let’s go’.

Harry: Is that located anywhere?

Ina: Yeah,

Harry: In the central chest?

Ina: Yeah, my arms and chest, and I say ‘come on let’s go!’.

Harry: Your tone is actually dropped very dramatically as well although you’re still smiling away, you’ve dropped your facial tone as you were...

Ina: A bit frustrated I think.
It is interesting to compare her kinaesthetic responses with those evoked by the memory of the learning experience she had classified as 'good'.

_Harry_: I want to now go back and do what we’ve got, so let’s take you to a bit half way through the course, just before the course and all that learning, just before you were away. And just remember yourself back in the classroom then, and see what you’re seeing, hear what you’re hearing, watch any feelings, tastes, any smells, anything that you can actually give a title to, and just as you remember that can you tell me where that picture is?

After describing the visual and auditory aspects of her internal representations which his words evoked, (which were very different from those of the previous experience), she also describes a very different kinaesthetic state. Here links began to emerge between _how_ something is learned, and the learner’s physiological state.

_Ina_: Yeah, everyone’s talking. I can see people (mentions one of the assistants), everyone’s talking, we’re all talking. We’re all listening.

_Harry_: Any feelings?

_Ina_: Yeah. Absolutely happy.

_Harry_: How does happy feel to you?

_Ina_: How? Great!

_Harry_: What does happy feel like?

_Ina_: It feels light.

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7 There had been a ‘half-term’ break halfway through the two month course.
Harry: Light. Is that lightness located anywhere?

Ina: Everywhere.

Harry: Everywhere? Good sensation?

Ina: Oh God, yes.

The same pattern is shown in Steve's descriptions of his different internal representations about learning before, during and after the course. They appear to show dramatic emotional, (and therefore physiological) differences. In the first representation he experiences himself as anxious, in the second as more content. He also reports seeing himself in his internal representations, as if he was taking the perceptual position of witness rather than actor.

Steve: Yeah. ... well the first one is smaller and framed, and the second is bigger and has a fade out frame just as it goes out of my line of vision, actually I see things clearer with my glasses on, even internally, bizarre, (laughs) oh my God, It's bizarre to discover that now, but em .. yeah, the picture of before the course is framed, there's a very sort of anxious looking me in the picture, whereas in the other its a brighter picture ... more, I don't know, more content or something. Yeah, much... I suppose in the second picture I look much more content. ... I don't look any different, maybe a few weeks older, that's about it, but I think the picture after the course is brighter, and it is a bit more vibrant in colour as well, or is it? ... (indistinct.) I think those are the main changes. Both are still pictures. In one I'm on my own and in the other I'm with a bunch of people.

Edward did not always cover the minutiae of his interviewees' sub-modality distinctions, but he uncovered some interesting aspects relating to the changes that interviewees had made in their personal views of future tasks. With Lucy, he chose to approach the differences in how she now approached teaching, exploring the differences
between the ‘before’ and the ‘after’ of the course. What he was doing, essentially, was to explore how she now calibrated differently to a future event. This is what she told him; it is noticeable that she implies that her kinaesthetic response was linked to her internal picture of planning a future event. In this short extract one can also get a sense of the interplay between information about the present, and about the future.

*Lucy:* *I can see a big smile on my face actually. It’s really weird. It just seems happy, I feel more in control of the ... of the organisation, I feel more comfortable, it’s like I’m given this... I don’t know.... something I can use, like... I’m probably actually excited like I’m trying to use it now. I think it’s what this picture’s doing.*

Here I have chosen to focus on people’s kinaesthetic responses to their constructs of two types of learning they had experienced. The differences were noticeable; most people reported that their physical responses to their memories of their experiences of the more orthodox, information transmitting, approach to teaching resulted in bodily sensations that they often reported as unpleasant. When thinking about the type of teaching and learning they had been exposed to in the NLP course, there had been changes in many factors such as their constructs, their beliefs and values, and their vision of their own futures.

Their internal representations, which I suggest are an essential part of people’s information processing, were also different. It is as if they were coded differently at the level of the senses, in response to how information was structured at the more abstract levels. Our beliefs and values seem to produce a kind of ‘top down’ effect, which reaches even into the body, possibly through the internal representations they generate. Perhaps one of the insights to emerge from these interviews is that we teachers have the power to create (and transform) learners’ constructs at the level that Bateson (1972) describes as ‘learning about learning’.
Teaching therefore seems to carry messages about more than one level of abstraction. Not only does it involve the transmission of information, it may also create beliefs about the nature of the activity which people are engaged in. According to Bateson (1972) learning, and learning about learning are of two different logical types. I suggest that these two processes may be distinguished in some of the students’ responses. Transformation happens at the higher level of learning about learning; it results in more profound changes in people’s beliefs about learning, and about themselves as learners. These are changes in the processes guiding learning, rather than the content of the topic. They involve changes in factors such as the abstractions that people have built of their beliefs about learning, their vision of their own future, their constructions about themselves as learners, all linking to the images, sounds, bodily sensations, tastes and smells that seem to be such an essential part of human information processing.

10.9. Conclusion

In this chapter I reviewed the phase of this inquiry, which was carried out by two of my assistants on the NLP course in 2000 after my return to the UK. I used the meta-model to analyse the transcripts. I focused on the ways in which people had constructed the abstractions about teaching and learning from participating in the NLP course. I found that there were certain key nominalisations, such as ‘failure’ and ‘learning’ which were complex structures with far reaching implications for the beliefs that people had made about themselves as learners. This then influenced how they perceived their own personal and professional futures. The apparently all-pervasive concept of failure in this group, seemed to act as an inhibitor; a metaphorical ‘virus’ preventing the system from fulfilling its potential. I suggest that this could be because it acts on the TOTE process (Miller et al 1960) altering or blocking off the individual’s potential to create, then calibrate to, future possibilities. It is as if it weakens the power of the dimension of time in people’s internal worlds.
I also explored the nominalisation 'learning', which proved to be a complex of different deletions, generalisations and connections. I believe that what these transcripts show is that when beliefs about learning change, other profound transformations also happen. This has implications for teaching, because it seems to be an impossibility not to communicate about learning at the level of learning about learning, with far reaching consequences for how the activity is then approached by the learner. Teaching, then, is also about creating and transforming beliefs about the individual as a learner, as well as about the transmission of 'knowledge'. The study of these transcripts indicates that such transformations may have far reaching effects on the lives of individuals.

The approach to the textual analysis that I used in this chapter was based on Bandler and Grinder's (1975) meta-model as an approach. In a sense, it is also an evaluation of its usefulness as an instrument. It enabled me to uncover the complexities behind people’s abstractions coded in the nominalisations 'failure' and 'learning', and enabled insights to emerge, both on the nature of people’s constructs, and the apparent effects they had on their beliefs and actions. These included their constructions of themselves as learners. People’s internal worlds are of an extraordinary complexity and individuality, yet there may be universal processes that are essential to how we process information. These are at the same time mediated through language. This raises the question “Could language and thought be two aspects of the same phenomenon?” The analysis of the transcripts indicates that their mutual interactions may be subtle, intimate and powerful. I extrapolate some possible epistemological factors from these analyses of the transcripts in the next chapter.

Last but not least, there are many links between people’s abstractions and their inner, conceptual worlds of internal representations. These, including bodily responses, are also influenced by the many abstractions, categories, connections and time frames that seem to operate at other levels. When we ask 'what is it that has the power to
create and re-create such powerful beliefs?' then the answer points to language. There is an awesome power to words and syntax, which, in this approach, become information that is potentially deeply transformative at many levels for individuals. The next chapter is about exploring and tentatively describing what I propose are some of the fundamental processes that enable us to know, and to know that we know. These could be described as our mapping processes.
Chapter 11. Mapping the Territory; Synthesising the Research Findings.

A scientific epistemology, defined as an analysis of cognitive processes in all their diversity, would be comparable to a kind of comparative anatomy of the structure of knowledge, collating the most widely separated intellectual constructions in different areas of science so as to extract the invariants and transformations. (Piaget 1972:3)

We work hard to make sense, according to our epistemology, of the world which we think we see. (Bateson, in Donaldson 1991:222)

The new geometry mirrors a Universe that is rough, not rounded, scabrous, not smooth. It is a geometry of the pitted, pocked, and broken up, the twisted, tangled and intertwined.... The pits and tangles are more than blemishes distorting the classic shapes of Euclidean geometry. They are often the keys to the essence of things. (Gleick 1998:94.)

11.1. Introduction

In this chapter I explore a hypothetical model of the epistemological processes that may be involved in the construction of our cognitive maps. This hypothesis emerged as the result of summarising and synthesising the findings that emerged from the transcripts of the two sets of interviews. I also use some material from a lesson I observed, recorded and transcribed in 1999. Moustakas (1994) urges that the phenomenological approach involves a continual reflection of the material under scrutiny. "Things become clearer as they are considered again and again" (Moustakas 1994:93). He suggests that the stream of reflection should continue "to the point of unifying the parts into a whole", (Moustakas 1994:93). It is in this spirit that I

\[\text{\footnotesize 1 This was as part of the first year coursework (1999).}\]
offer this new model of the relationships between language and the construction of cognitive maps. Language is considered as more than a transmitter of content. I propose that it also plays a significant epistemological role. Statements contain instructions for the elicitation of certain processes critical to cognitive mapping. We may thus separate the effects of language into two dimensions. In the first, language is understood as transmitting information about the content of a topic. The second dimension is that it also conveys messages about how the information is to be configured. This is considered as its epistemological aspect.

I suggest that there are a number of basic epistemological functions that are used to make meaning out of the chaotic mass of information that continuously bombard our senses. I further propose that these functions may act in systemic, interdependent ways. In an attempt to provide a model, which may explain their actions, I have drawn on complexity and chaos theories for some of my explanatory metaphors. I further propose that the language used in classrooms could be critical to the construction of learners' cognitive maps. My philosophical standpoint is that of an instrumentalist, where a model is used more as a heuristic device than a description of the laws of the 'real world'. I review what I believe to be some of the epistemological directives embedded in language forms, which emerged from my analysis and reflections on the two sets of interview transcripts, and suggest these are essential to teaching and learning. I end with a model (which I stress has the status of a hypothesis) of the basic processes I believe are involved in processing information. I further propose that fractal theory may offer useful model to explain some of their dynamic interactions.

11.2. Language, teaching and learning

The current predominant approach to education has recently been much influenced by constructivism; the learner is now perceived as someone who is actively engaging in the creation of their own
knowledge, as well as that of others, (Mercer 1995, 2000). I have reviewed the subject of cognitive maps and constructs in Chapter 3. The constructivist approach to teaching is summed up by Wells (2002): "Knowledge cannot be transmitted. It has to be constructed afresh by each individual," (Wells 2002:236). Wells also points out that what, in his view, is wrong about the ‘transmission model’ of teaching is that it focuses almost exclusively on the input, rather than on the processes that people use to arrive at understanding.

Rasmussen (2001) suggests that "language should be regarded as a medium which the psychic and social processes, respectively, can use to structure their own operations". (Rasmussen 2001: 575). Mercer (2000) proposes that language enables us to engage actively in the mutual construction of knowledge. I also suggest that language and teaching style play a fundamental role in how people create their internal models, because it could be said that language may catalyse or inhibit many of the processes that are vital to learning. For instance, Lee and Law (2001) suggest that the language that teachers use may reinforce scientifically inappropriate conceptualisations.

The idea that language may shape cognition is not new. Fauconnnier, for example, has explored the idea that language has an important constructive function. "It is only within a complete discourse and in context that meaning will actually be produced. The unfolding of discourse brings into play complex cognitive constructions", (Fauconnier 1997:37 – 38). However, Fauconnier’s work seems to be mainly theoretical; there is little evidence of any empirical underpinning of his nevertheless generative ideas. These final reflections on my inquiry are distinct from Fauconnier’s work in that they derive from an empirical inquiry. That is, they are as empirical as the study of the phenomenology of such evanescent phenomena, introspectively arrived at ,allows. It then outlines a number of dynamic constructive processes that may be mediated by language.

I have introduced the distinction between the content of language and the processes it generates. Thus any transmission of information that
is mediated through language, including teaching, transmits messages about both the process whereby the model is to be constructed, as well as its content or subject matter. This model of learning is therefore one in which stresses the importance of language in the construction of learners’ models. This follows in the Vygotskian tradition (Frawley 1997). It places considerable emphasis on the idea that teaching becomes as much about activating the processes of learning, as about the transmission of content. There have been some recent attempts to explore these areas within an educational context. Davies (2002) makes the point that one of the central questions that should be addressed when planning a topic to teach, is “what language will work best to achieve this particular goal?” (Davies 2002:241). Galton et al (2002) stress the need to impart specific cognitive strategies to learners in order to improve learning.

Mercer (2000) proposes that one of the functions of language is “for collectively making sense of experience and solving problems”. (Mercer 2000:1). What the model I propose adds to present thinking about such issues is that it offers a more detailed description of some of the epistemological processes embedded in language structures. I suggest that these are fundamental to any sense making. Process and content are thus two aspects of communication, and can be studied separately. They may need to be perceived as two separate aspects of teaching.

This has implications for theories such as the Sapir-Whorf hypothesis, and Vygotsky’s approach to learning, neither of which make such a clear distinction between process and content. In cybernetic terms, process and content are not separate entities, but two aspects of the same dynamic of sense making. Changing the ways in which something is languaged, also changes the ways in which its meaning is constructed or sought. This is close to Lakoff and Johnson’s views that two different sentences can never say the same thing, but will often subtly alter meaning, (Lakoff and Johnson 1980).
11.3. Cybernetics, and other approaches to understanding complexity.

The model that is proposed is also cybernetic and systemic, in that it suggests that both language and learning communicate (and can influence) many different levels of organisation within human systems. Kenny and Boxer (1992) proposed that a cybernetic approach enables people to make distinctions between what are essentially different phenomenological entities. There is a sense in which this inquiry is also multi-level in a systemic and cybernetic way. This resembles Bateson’s (1972) way of teasing out what may be happening at different levels of understanding. Phelps and Hase (2002) have explained that applying complexity theory also means thinking about phenomena in terms of hierarchies of levels of complexity. There are, for instance, at least four qualitatively distinct levels that can be identified in this inquiry, with a fifth that is emergent. On the next page is a way of explaining this model diagrammatically.

One of the difficulties that we encounter in an exploration such as this is that we lack a terminology for how to describe what happens at the different levels. Each involves different ways of thinking about the phenomenon. In a sense, the reader of this chapter may be learning about learning about learning about learning about learning, so generating yet another layer of abstractions. This chapter is an attempt to synthesise and map what this inquiry has uncovered about the phenomena of language and learning, as the result, as it were, of learning about learning about learning about learning!

The other challenge that arises when using a cybernetic approach to describe a model is that written descriptions tend to present information in a linear way. The model I propose is non-linear and systemic. If I were merely to list all the elements of the model, then that would not represent my thinking on it; all the processes that I describe are a part of all the other processes, so that if, for example, I
take the concept of causality, then that contains within it many of the other dynamics such as abstraction, connections, deletions, goal directed thinking, beliefs, and others. If I take the example of intentionality, then it will also encompass such processes as cause-effect patterning, internal representations, abstractions, induction and deduction and the TOTE. There seems to be an almost fractal nature to the relationships between these epistemological dynamics that I describe.

Diagram 1. Different levels of abstraction involved in this inquiry, using Bateson’s model of logical levels. Modelling as a multi-level activity.

**Learning about learning about learning about learning about learning:**
*Reading this.*

↑↓

**Learning about learning about learning about learning:**
*Synthesising research findings and reflecting on them.*

↑↓

**Learning about learning about learning:**
*Analysing the transcripts of learners’ interviews.*

↑↓

**Learning about learning:**
*Interviewing learners.*

↑↓

**Learning:**
*Participating in the NLP course.*

Diagram 1. There was learning on the NLP course, and then there was learning about learning when the interviews were carried out and reflected upon. Then, in writing the analysis of the transcripts, I was learning about learning about learning. This chapter could be described as learning about learning about learning about learning. Each of these levels, according to Bateson, will show different emergent qualities.

This hypothesis proposes that the relationships between language and thinking are essentially non-linear. It also borrows from chaos and complexity theory as explanatory devices, (Gleick 1998). Clegg
(2000) and Lee and Law (2002) have proposed that the most powerful way of altering concepts, and therefore how we understand, was through changing their perceived ontological bases. There is a sense in which the model that emerges from this inquiry has uncovered a different ontological dimension to learning and teaching. Both chaos theory and complexity theory suggest that, as well as randomness and disorder, there are, within chaotic systems, the seeds for an emergent patterning and ordering. This has been used to explain the apparent mixture of random and patterned activities in a classroom by Doll (1989).

Doolittle (2003, 2003A) urges that the time is ripe for a change in the explanatory metaphors used to describe the teaching and learning processes. He suggests that complexity theory could yield useful ways of thinking about learning. It is coherent with constructivism, "As with constructivism, a complexity perspective recognises the difficulty in predicting global behaviour from an understanding of its parts. This complexity-based alternative perspective understanding the whole, by understanding its parts is to understand the whole by understanding the interaction of its parts. (Doolittle 2003:2).

Ontologically, chaos theory generates the paradox that systems are essentially self-organising; that chaos contains underlying ordering principles. Phelps and Hase (2002), in their theoretical paper, urge that complexity theory may be relevant to action research, because it offers a formal attempt to question how coherent and purposive wholes emerge from the interactions of simple and sometimes non-purposive components. They also support the exploration of the connections between complexity theory and constructivism.

The ontological bedrock of systems theory is information. (Bateson 1972). This proposed model suggests that the chaotic dance of disorganised data is self-organised via some basic epistemological processes into more or less ordered conceptual models. These processes may be seen as part of the dynamics of self-organisation,
(Gleick 1998). Phelps and Hase describe the process of emerging complexity as producing what they term a bifurcation or phase transition, where "the branching of phenomena seen during chaotic episodes [...] bifurcation usually results in new, but more complex, stabilities." (Phelps and Hase 2002:516).

Such conceptual processes may also, I suggest, be catalysed by certain language structures. Patton (1990) proposed that systems theory and chaos theory could offer a new set of metaphors for thinking about what we observe. "Chaos theory challenges us to deal with unpredictability and indeterminism in human behaviour", (Patton 1990:84). Within this explanatory framework, the epistemological dimensions of language could be seen as one of the ways in which an ordering is brought about from the chaos of information overload.

Diagram 2 (page 310) lists some of the basic epistemological processes involved in the construction of cognitive maps. Although they are presented in linear form, they are all interactive in a systemic way. This is summed up in diagram 3 (page 344). Diagram 4 (page 345) synthesises what I believe are the interactions between the senses, our epistemological processes, language, and cognitive mapping. Separating out these many factors diagrammatically can only hint at their complex interaction.

11.4.1 Induction, deduction, and abduction in particular

Indurkhya (1992), taking a Whorfian perspective, proposed, "our perceptual and cognitive apparatus is not a passive receptor of sensory stimuli but asserts a formative spirit in shaping the sense data through its concepts" (Indurkhya 1991:99-100). There is a sense in which the whole of this inquiry has been to track this formative spirit, especially the extent to which language is a part of this dynamic. Some of the most striking phenomena to emerge from this inquiry are the seemingly myriad levels of abstraction that human
consciousness engages in to create its cognitive models, (Murphy and Lassaline 1997).

This idea that we operate at many levels of abstraction is not new; it is the central thesis of Korzybski’s (1958) seminal work, and the conundrums that this idea generated were a life long interest of Gregory Bateson’s. This approach is drawn from Russell’s theory of logical types, which posits that there are many levels of abstraction to our sense making. Korzybski summed up the resultant epistemological challenges for anyone interested in language and consciousness with the apothegm ‘the map is not the territory’. Many others have recognised the multi-levelled nature of our cognitive systems. Indurkhya 1992, for instance, stated that “a cognitive system might well have several layers with each successive layer representing a higher level of abstraction” (Indurkhya 1992:181).

The processes of abstraction raise important issues for our understanding of how we think. Language is itself an abstraction, furthermore with the ability to abstract. If we think of mental models as consisting of various ‘layers’ of abstractions, then it becomes possible to propose that we have the ability to scan levels from higher to lower, and lower to higher, and across different domains. If the idea that language can guide some of these processes has any validity, then moving people from abstract to concrete, or concrete to abstract, or across domains, through language, may be possible.

One of these basic processes, induction, involves the generation of abstraction of generalisations from prior experience, (Chalmers 1978). A child investigates how a red-hot stove top feels, and satisfies her curiosity by reaching out to touch it. The subsequent burn may cause her to generate the abstraction that glowing red things are hot and hurt if touched. Thus are generalisations inductively formed.
Diagram 2. Some basic epistemological processes that can be translated into language and used to construct cognitive maps.

Abstraction, categorisation, classification, ordering into logical levels.
- Induction
- Deduction
- Abduction
- Deletion

Making Connections
- Causality: (Cause-effect).
- Complex Equivalence (includes metaphor).
- Lost performatives
- Mind reading
- Modal operators

Internal representations
- Vision
- Hearing
- Kinaesthetic; bodily sensations
- Smelling
- Tasting
- Movement and balance

Trans-derivational searches:
- Involves internal dialogue

Comparison and judgement (scalarity).

TOTE: calibration and feedback

Converting information to analogical or digital

Quantification: ordinal and cardinal;

Changing positions in space and time

Physiological state; emotions and levels of arousal.
The complementary process to induction is deduction, where the abstractions are presented first, and then linked to details, (Chalmers 1978). The deductive process is one where higher levels of abstractions are used as conceptual frameworks to which information can be assigned. Categorisation influences what is, and what is not, attended to, (Whittlesea 1997). This process is summed up by Thich Nhat Hanh (1988) when he wrote “Our mind creates categories ... and puts all physical and psychological phenomena into categories ... before examining them and trying to find their true nature” (Hanh 1988:46).

11.4. 2. Abduction.

Induction and deduction are recognised as basic to how learners make sense, (Muijis and Reynolds 2002). However, there is a third, equally powerful process, which Bateson found of interest, namely the process he referred to as abduction, which he believed was as epistemologically significant as the other two processes. Abduction involves the creation of connections between different conceptual entities. Abduction may also be seen as an aspect of the formation of connections between conceptual entities. (I have reviewed this aspect of language and cognition in chapter 5.)

One of the best examples of abduction is the process of metaphor creation. This involves using a familiar construct in order to explain one that is unfamiliar. Lakoff and Johnson (1980) have described the process as one where the structure from one domain is used to structure the information from an unfamiliar domain, through the super-imposition of perceived structural similarity. Gineste and Indurkhya (2000) suggest that metaphors not only create new associations between concepts, they also generate new understandings. Thus the bringing together of two separate entities

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2 Whereas induction and deduction can be thought of (metaphorically) as upwards or downwards movements, linking different logical levels, abduction can be thought of as a horizontal movement forming links between different logical types.
causes the emergence of new concepts. Hitherto unconnected entities become linked so that radically new insights emerge, such as Winston Churchill's linking iron and curtain to create a label and thus a new perception of the cold war, (Schon 1967).

This indicates that our ability to code for, and perceive, similarity is a basic epistemological process. This idea is gaining support. (Hahn and Chater 1997, Goldstone 1998A, Gattis 2001). Its complementary opposite is the perception of difference, without which another basic process, comparison, would not be possible. The creation of a metaphor is therefore only possible if similarity is perceivable between the source and target domains. Mercer (2000) proposes that metaphors “are categories of likeness which people use to organise the data of experience. We say that something ‘is’ something else, and so make the second thing a category which includes the first.” (Mercer 2000:78). Cameron (2002) urges that a greater understanding of the role of metaphor is needed in the creation of scientific concepts. Metaphors are also fundamental to language production and comprehension.3

Bateson wrote in 1977 “It is abduction which enables me to draw my instances of a given regularity from a vast range of different universes of experience”, (Bateson, in Donaldson 1991:150). All metaphoric and analogical thinking originates through connecting conceptual entities through abduction. Lakoff and Johnson emphasize the importance of connections: “Basic ontological metaphors are grounded by virtue of systematic correlates within our experience” (Lakoff and Johnson 1980:58).

Metaphor and analogy are now thought to be of central importance to how we make sense. Clement and Gentner (1991) have explored the processes involved in analogical reasoning, suggesting that analogy is

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3 I have reviewed some of their aspects in Chapter 5.
a process whereby one matches similarities between unrelated domains, thus grouping them and assigning them to 'higher' categories. Bateson believed that processes involving abstracting were among the most important of ways that we have of making sense, describing them as 'tricks', of which the best known were "induction, generalisation and abduction" (Bateson and Bateson 1988:174). By generalisation, I believe he means the process of applying information coded at higher levels of abstraction, which includes deduction.

Gick and Holyoak (1997) demonstrated the power of abduction as a method of facilitating medical students' thinking when asked to solve a theoretical clinical problem. When a group of students was told a story whose content was nothing to do with a clinical problem they were asked to discuss, yet which contained, within its language, both the structure of the problem and the processes whereby a solution could be arrived at, this group showed more insight into the apparently unrelated clinical situation than did the group which was not exposed to the story, but simply given the problem to discuss. Here the structure of a story unconsciously influenced the way in which succeeding information emerged, despite the fact that the content was different. This may also be an example of processes operating unconsciously, and shaping the understanding of content, which is then perhaps consciously attended to.

There has been some interest in how students generate explanatory analogies for themselves, (Clegg 2000). Burchell and Dyson, (2000) explored the use of writing stories as aids to reflective practice, and found that they provided insights into the writer's wider situation. This is typical of the working of a largely abductive process. Cameron (2002) suggested that the mediation of metaphor by a skilled teacher reveals strategies for avoiding interpretive problems, and maximises the impact on the learning of science. It is also suggested that abduction may be a largely unconscious process. This could be
another example of the fundamental epistemological role of connecting.

The act of creating metaphor has been extensively explored by Lakoff and Johnson (1980), whose now classic work has generated a different approach to language and thought, often referred to as cognitive linguistics. Sandra (1998) suggests that cognitive linguistics should be concerned with the mental structures, which make language possible. The group of cognitive linguists which focuses on the notion of meaning making through what they call conceptual blending, such as Fauconnier (1997), Fauconier and Turner (2000) are essentially exploring the rich diversity of abductive processes and their role in how people make sense. They even extend this to the notion of causality, (Fauconnier and Turner 2002, website download).

11.4. 3. Induction, deduction and abduction in the classroom

Deduction, induction and abduction do not necessarily operate independently, but perhaps we are always, simultaneously, inducing, deducing and abducing whenever we are engaged in thinking. The question then arises; how can we guide these processes through how we communicate in the classroom? I believe the following extract from the maths lesson I observed demonstrates how a teacher uses strategies and language to facilitate the processes of induction and deduction, thus influencing the processes whereby the children learn and make sense.

When I observed Mr Phil teaching a lesson about a Turning Value Problem, he seemed to have the ability to move the children’s thought processes effortlessly between inductive and deductive thinking. He did this through how he spoke to them and presented the material. He asked the children to cut out rectangular pieces of various sizes from the corners of sheets of paper so as to make a box. He then invited them to explore how changing the size of the indents would alter the volume of the resultant box. Many parts of the lesson were
largely inductive in that he engaged the children in activities enabling them to arrive at a general rule about the mathematics of volume for themselves. He often used incomplete statements, interspersed with directives that set the children's thinking in a particular way. Here is an example of his guidance of the children's inductive processes. After they had cut out the first box, and worked out the volume, he directs them to cut away more of the paper, and then to find that a smaller piece of paper, which, when cut in a certain shape, actually produced a box with a bigger volume.

*Mr Phil:* Now isn't this weird? We've cut out more paper; we've got less paper now (he waves his own demonstration 'box' in front of the children) but a bigger box! ... So maybe if we cut out even more paper, we'll get an even bigger box, (rapidly and enthusiastically) all right then, let's try it, another one, all right, yeah!

The children's recorded responses to this illustrate how they are searching to make sense of the puzzle he has set, by looking for the abstraction, (or rule) at a higher logical level from which they would be able to create meaning, and then apply it further. The mini-disk recorder that I was using picked up different children's comments; their talk indicated that they were engaged in searching for a generalisation or rule, which would 'fit' the raw data.

*First child:* Sir, its going to keep getting smaller sir.

*Second child:* no it's going to keep getting bigger ... 

*Third child:* no it's going to keep getting smaller.

*Mr Phil:* Hm, maybe it will, maybe it won't.

By the end of the lesson the children seemed well on the way to understanding the theory that there would be a certain limit to the growth in volume as the surface area of the box got smaller. The
homework that he then set them included asking them to see if they could work out a general mathematical principle relating changes in the surface area of a box to its volume. This is directing a largely inductive process. What also interested me at the time were the ways in which he gave messages about the nature of learning, which is at a higher level of abstraction than working out a formula. He did this through his enthusiasm and the ways in which he talked to the pupils. He was communicating the complex equivalent \textit{learning} = \textit{discovery}. Whenever an abstraction is communicated, whether at the level of awareness or below, it seems to create a framework for deduction. It acts as a category, which then influences how its contents are attended to.

We could further hypothesise that if learners are given information about the nature of themselves as learners, the beliefs they form may be carried over into other situations. This is another example of a process of abduction. The language structures, which catalyse the processes of induction, abduction and deduction, are different. It is as if they create different kinds of movements in the thought processes of learners; either from the more specific to the abstract, the abstract to the more specific, or creating links between different domains. These are different processes embedded (as it were) within the nominalisation 'learning'. What Mr Phil did was to facilitate the inductive processes in his learners by the ways in which he communicated to the class. It would have been very different (and using deduction) had he put the relevant formula on the board, then given the children exercises teaching them how to apply the given theory.
11.5. The role of the senses in teaching and learning: the world of internal representations.

The exploration of the inner world of internal representations, and their undoubted roles in sense making, has been one of the key innovative areas of this inquiry. However, there remain some unanswered questions. What are the roles of the internal representations in the construction of knowledge? How does language influence this aspect of our inner worlds? There has been almost no systematic research into this area before my own interviews, so I can only reflect on this part of the inquiry, and wonder about the implications that this may have for teaching and learning. It may be for neuro-biology to offer further insights. There have been attempts at this; Hennigen (2000), for instance, has explored ways of linking introspectively obtained information with possible neuro-biological mechanisms.

One of the aspects which emerged from this inquiry was that there is a “layer” to consciousness in which the senses play a vital role in the construction of cognitive maps, through the creation of internal representations. People seem to be unique in the way in which they constellate their individual internal world of the senses. If we use the idea that cognitive maps may include a hierarchy of abstractions, then internal representations could be seen as belonging to one of the ‘lower’ layers, ‘above’ which words, abstractions, generalisations and the other complex building blocks of our conceptual architecture operate. Words, and language itself, are of a different logical type than internal representations, yet these two phenomena apparently interact in a dynamic way.

At this point we could ask: what would happen if we thought of teaching as partly the creation of certain kinds of internal representations critical to the construction of knowledge? It is as if thought, memory, reflection, fantasy and thinking about future activities (which are essential to the TOTE process) are dependent on
internal representations. Thus the internal re-creation of events through the use of our senses is vital to our continuous functioning. What people learn also appears to be coded internally through the senses. So our senses not only receive information from the external world, they have a vital role in 're-presenting' information internally.

This aspect of the inquiry is the perhaps the most radical and new. There is little in the academic literature that addresses the roles of the senses in the construction of knowledge. Schnotz et al (1996) have proposed that visualisation is an essential part of the act of constructing. However, research into the roles of all the senses in the formation of cognitive maps is noticeable by its absence. This aspect of thinking, which my collaborators described so generously, does not appear to have been the focus of mainstream cognitive psychology. Yet it was not unknown in history. Frances Yates (1992), investigating the ways in which ancient and mediaeval scholars demonstrated apparently extraordinary abilities to memorise, did so by first building up complex internal representations. The information to be memorised was then assigned to specific loci within these constructs. These seem to have been mainly using internal vision. Cicero stated that the way to develop the memory was as follows:

"we ought, then, to set up images of a kind that can adhere longest in the memory. And we shall do so if we establish similitudes as striking as possible; if we set up images that are not many or vague, but active (imagines agents); if we assign to them exceptional beauty or singular ugliness; if we ornament some of these, as with crowns or purple cloaks so that the similitude may be more distinct to us...”

(Quoted in Yates, 1992:27).

This passage shows the evocation of sub-modalities, such as sharpness, movement (which I take from the use of the word active), and colour. One of the most important aspects of the hermetic tradition of memorising was to build up complex internal representations of structures where space and locus were important,
so there could be 'places' where the contents to be memorised were
assigned. Yates claimed that the adepts at this art would 'build'
internal representations of palaces and other structures of
extraordinary complexity as memory aides.

Yates claims that such complex internal pictures were also spatial and
three dimensional. Thus some aspects of what I have uncovered were
not unfamiliar to the hermetic tradition, whose understanding of the
power of visual imagery was a closely guarded secret. There may be
untapped potential for the modern world in the activation of people's
internal representations, both for learning and memorising. However,
this part of our cognitive maps can be created, altered, skewed,
distorted, inhibited or generated through language, whether this
comes from an external source, or from people's own internal
dialogues.

Language seems to have considerable power to influence this level.
Subtle changes in wording can alter internal representations; it seems
to be able to change how information is coded at the sub-modality
level. It can make a person's internal responses to a topic coloured, or
black and white, large or small, vivid or pale. They can be
experienced as a film or a series of stills; three dimensional or two
dimensional, with an apparent location in space. The words that are
used can evoke more of one sense than another. They can enable
people to see, hear and feel, as well as taste, smell, balance and
move, when information is coded by the senses. In my interviews it
seemed that language structures could apparently even influence the
location of people's 'pictures' in their conceived space. Not only does
this happen immediately, as the words are de-coded, it also
influences how experiences are then re-accessed at a future time.
How teachers use language also seems to create certain kinds of
memories, partly coded as internal representations, which can stay
operative in people for many years. They form a part of people's
beliefs. Such constructs may be insidious in their influence on the
person, operating below levels of conscious awareness, perhaps for
good or ill. It seems that not only the words that teachers use, but their style and approach, can influence the internal representations that remain long after the end of lessons.

Internal representations are by no means unconnected to other cognitive processes. How the content of a topic is categorised, apparently has a direct influence on the sub-modalities of the internal representations that are evoked. This aspect is, I believe, indicated by some of the examples of people's experiences of learning from the transcripts of the Master Practitioner's interviews. After there had been a change in students' beliefs about themselves as learners, (a re-categorisation, as it were) there were also changes in how the experience of learning was then coded at the level of their internal representations. This may have been as the result of a deductive process, where changing categories and connections at more abstract logical levels had a direct result on how the experience was then accessed internally and constellated by the senses.

I have shown that through introspection, people were able to report on changes in their subjectively experienced sub-modalities in response to changes in the syntactic structure of my statements and directives. I believe that much more research needs to be done on this; this inquiry is only skimming the surface of a phenomenon, which needs further exploration. Bandler and Grinder suggest that one can evoke rich internal imagery in all the sensory modalities through careful use of sensory predicates; that is, words that elicit a response from a particular sensory modality, (McWhirter 1992).

This may be too simplistic a view of how we may influence these activities in others; yet I have not really been able to answer a question such as 'how do we influence internal representations through our language?' This inquiry only seems to show that it is likely that we do. There appears to be a dynamic interaction between words and the constructs that are produced at the level of internal representations. This might be clarified at the level of neurological
studies. I believe that this inquiry has at least demonstrated that these evanescent, fragile, constantly changing, yet powerful aspects of our internal constructs are indeed vital to creating understanding, and therefore of considerable epistemological significance.

11.6. Connections that produce influential beliefs

Making connections between different conceptual entities seems to be fundamental to sense making. In the analysis of the Master Practitioners' interview transcripts, examples emerged where people seem to be disconnecting and then re-connecting conceptual entities, especially about their understanding of 'failure'. In this section, I want to explore the possible roles of connections in the structuring of people's beliefs, and how these may be influenced by communication. I also suggest that when people create beliefs about their own learning, and what kind of learner they are, this involves the formation of many different kinds of conceptual connections. Such frameworks can act as powerful abstractions for the conceiver, which then influence the conceiver's approaches to their future actions.

This is echoed in the recent work of Brownlee and her collaborators (2003) who showed a link between teachers' conceptions of learning, and their views of their own outcomes. The authors distinguish between 'surface' and 'deep' learning, where 'deep' learning involves the active construction of knowledge. Beliefs will also influence the generation of goals. Bandura (1997) proposed that when people have clear attainable goals, these produced a 'higher' performance level than if they only had general intentions to do their best. Illeris (2003) showed that adults learn well if they can relate what is taught to their immediate goals. Papanastasiou and Zemblyas (2002) have reviewed the notion that people's 'self' beliefs play a role in effective learning, and that this can be influenced by their own perceptions of their past achievements. Vrugt et al (2002) claimed that the theories that

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4 I have reviewed this aspect of epistemology and language in chapter 5.
people harbour about the determinants of their achievements could also influence their motivation and the results they obtained. The term 'belief' has a complex dictionary definition (Tosey and Gregory 2002)\(^5\).

I propose to use the idea of beliefs to explore the notion that many of the epistemological processes I have described operate simultaneously, as if they were different aspects of a whole. When using the term 'belief' we are essentially using a nominalisation, with all its attendant epistemological traps, which I discussed in Chapter 4. How beliefs are defined depends on the perceptual stance taken by the definer. Chamber's Dictionary, (1959) for instance includes among its definitions of beliefs 'to regard as true', 'to judge', 'the opinion or doctrine believed', and then includes 'intuition' as part of the meaning of the term. Wilson, (1990), on the other hand, prefers a more neurological approach, suggesting that beliefs are 'an imprinted and/or conditioned, and/or learned network of biochemical reflexes in the cortex of the brain', (Wilson 1990). Dilts, an early colleague of Bandler's and Grinder's, refers to beliefs as factors which are required to accomplish the behavioural goals, that is, why people do things in a particular way. "On a macro level, basic beliefs relate to the type of meaning, cause-effect relationships and boundaries people place on events or perceive in the surrounding world", (Dilts 1998:35).

\(^5\) Beliefs are very generalised concepts which influence how people think and act. Usually people will select information that supports or strengthens their beliefs. They are wide ranging explanatory principles which may be held by individuals or groups. They act as conceptual filters through which individuals' experiences are perceived, coded and made meaningful. Shared beliefs produce social cohesion. They cover a variety of experiences, such as the meaning of life and death, suffering, right and wrong, the construction of an individual's identity, task in life, relationships, roles and other life experiences. It is thought to be impossible to live without beliefs. They often create expectations about how things 'should' be. Many beliefs operate unconsciously, and are influenced by language. It is now increasingly surmised that a person's beliefs can influence such factors as health, recovery from illness and the ability to tolerate crises. (Tosey and Gregory 2002).
My approach to the notion of beliefs is that they are complex constructs that operate at many higher levels of abstraction. They can be thought of as a metaphorical framework of interconnecting cognitive 'entities'. Beliefs can be thought of as wide ranging explanatory principles that may be held by individuals or groups. They act as conceptual filters through which individuals' experiences are perceived, coded and made meaningful. They are more complex than simple nominalisations, yet people may sometimes use a nominalisation to describe a belief, such as 'human rights', 'liberty' and 'education'. When de-constructed, they can be shown to contain, as it were, many of Bandler and Grinder's (1975) meta-model patterns, such as the deletions, connections and generalisations that I reviewed in Chapters 4 and 5. Beliefs act as conceptual frameworks, categorising, constructing, connecting and linking to internal representations.

These reflections are informed by the shared introspections of my collaborators during my time with them. In this sample, some people showed significant changes in their belief systems about themselves as learners, as the result of experiencing a course where the trainers were using a particular approach.  

I suggest that the changes in people's beliefs about learning that I describe are indicative of the complex and multi-level effects of communication. This is not, on the other hand, a complete account of how teachers can influence the construction of beliefs. I offer the suggestion that both the verbal and non-verbal messages that were exchanged in the hustle and bustle of the course in Riyadh may have played an important constructive role for learners. These may have involved the creation of new conceptual connections. The category into which a learning activity is placed, explicitly or implicitly, creates

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[6] I have described some of these belief changes, and their effects, in Chapter 9.
a deductive frame, which may then affect learners’ perceptions; new experiences that they may then have when learning differently might catalyse an inductive process, which then creates new generalisations through induction.

When observing Mr Phil, I noticed that his verbally (and non-verbally) transmitted messages included information that what the children were doing was not only engaging in *solving an interesting conundrum*. He was also able to transmit the message that they all had the ability to solve the puzzle he was setting and developing. The children were often in a state of relaxed awareness, and obviously enjoyed his lesson. I wondered what generalisations they would form about Maths as a subject, and their own abilities to learn it. If I analyse this in terms of the non-verbally expressed modal operators, by implication he was informing them that this was something that they *can* do.

What emerged from the Master Practitioner’s interviews was that when there were significant changes in people’s beliefs about learning, other changes also occurred. One of these was a change in what people then believed was possible for them to attain in the future. This may be a consequence of their changed beliefs about themselves as learners. The teaching and learning styles that were adopted in the NLP course in Riyadh seem to have resulted in people altering many of their original abstractions, complex equivalences and cause effect patterns. These may have developed as the result of previous experiences of schooling. How they then judged themselves as learners had also changed by the end of the course. This was expressed through the kinds of lost performatives (Bandler and Grinder 1975) that were used by the interviewees. These include reference to ‘good’ learning, or ‘not so good’ learning. Thus we can begin to dissect the anatomy, as it were, of beliefs; they have connections and cause effect patterns within them, as well as criteria for making judgements, and internal representations of the mode in which future activities might be carried out. For each of these
processes used in the construction of knowledge, there is a language pattern that can either come from the teacher, or from the learner's own internal dialogue.

If, when we teach, we facilitate the emergence of constructs in our learners, then using language structures based on the meta-model could provide us with other means for creating the generalisations, nominalisations, and the myriads of linkages through cause-effect and complex equivalences that are among the processes that are inherent in the construction of knowledge. Learners' beliefs may then affect how they generate the internal representations of their own future activities that are essential to calibration in the TOTE process.

It seems that the beliefs that are installed through teachers' communication patterns may remain operative at unconscious levels for decades. Much of the information that we transmit between each other appears to be processed unconsciously. Gipps and MacGilchrist (2002) have reviewed the extent to which learners' achievements are influenced by the expectations (that is, the consciously and unconsciously transmitted beliefs) of teachers, especially in the range of children's success with literacy and numeracy. How is this done if not through words, but through the pre-suppositions and implications involved in verbal communication. It may also involve the multiplicity of non-verbal signals that always accompany human speech.

The implications of this for learning and teaching may be profound, especially if educators consider the idea that what and how they communicate can influence learners at levels below awareness, and even their physiology. Our epistemological processes operate outside our immediate consciousness, and yet can be profoundly influenced by many different aspects of human language. Erickson summed up this approach in the following extract:

*In any work you are going to use words to influence the psychological life of an individual today, you are going to use words to influence his*
organic life today; you are going to also influence his psychological and organic life twenty years from now.

So you had better know what you are saying. You had better be willing to reflect upon the words you use, to wonder what their meanings are, and to seek out and understand their many associations. (Milton Erickson, cited in McWhirter 1992)

**11.7. The inner dimension of causality as a factor in learning**

Bandura has explored the many ways in which a person’s belief in their own self-efficacy influences their personal goals and actions. This brings in the topic of people’s views on causality. Causal thinking has been described as an epistemological primitive. (Weick 2001) Within the conceptual structures that we call beliefs, there appear to be many dynamic processes, which interact. One of these is causality, which, although expressed as a nominalisation, represents one of the fundamental epistemological processes. It is as if there were specific programs that can be activated through language. Causality can be as much about what one believes about, say, what happens in the external physical world, as about oneself in relation to certain events. The transcripts of the Master Practitioner’s interviews often indicated that people had made a kind of internal movement along the axis of causality. Their experiences of being at the receiving end of knowledge transmitted deductively had made them feel less in charge of their own learning processes, thus placing them, as it were, ‘at effect’. The kind of learning that they had experienced on the NLP course altered the complex set of beliefs that they had about learning, and themselves as learners. At the same time, they moved, as it were, to experiencing more control over their own learning. It was as if, having changed the abstractions that they had created, they altered where they placed themselves on the continuum between experiencing themselves at cause or at effect. Bandura (1997) has pointed out that people’s beliefs in their own self-efficacy create
attentional biases and may then influence what memories are retrieved. These can be benign, or emotionally perturbing.

Viewed through the framework of systems theory and cybernetics, experiencing oneself as having control or agency in a situation, or not, generate two different perceptual positions which, because they act in the same way as categories, must then alter the conceivers' perception of experience. This will influence how they then react. Moyles (2002) summed up this aspect when she wrote “Once children see education as something that other people do to them, they lose the ability to take any initiative or responsibility for their own learning”, (Moyles 2002:260).

Wells (2002) has pointed out that the transmission model of teaching tends to override learners' attempts to construct their own knowledge, forcing them into a more passive role. Carrer and Scheider (2002) have reviewed the topic of how people construct their sense of autonomy and self-determination. They suggest that there may be key needs for people, among which competence, autonomy and relatedness may be vital emergent properties of human systems. Autonomy could be described as the sense that a person has of being at the locus of control, or 'at cause'. Sideridis and Kaissidis-Rodafinos (2001) proposed that learners made causal links between goal importance, behaviour and beliefs, motivation and perceived locus of control, as if these factors were all interactive dynamics of a system.

Causal thinking appears to be a powerful process, because it links motivation to the perception of what is possible for the conceiver. When I observed Mr Phil's lesson, I was struck by how he was able to give the children a sense that they were in charge of their own learning. He did this through behaving as if he was uncertain, using many questions, and never telling a child that he or she had the wrong answer. He appeared to make their learning something that they did autonomously. The next extract gives a sense of how he achieved this through the strategies he used. He engages the
children, as if they were really all responsible for solving an intriguing problem, and for which he did not have the answer.

Mr Phil: (Conspiratorially) *we are trying to get the (emphasis) biggest* ... *the maximum, the biggest possible volume we can, out of that square that we started off with, that seventeen square. What's been the best one so far, giving us the biggest, what's the best cut at it?*

Child 1. *eleven...*

Mr Phil. *Yes, how much did we cut out, I'm interested.*

Child 2. *three.*

Mr Phil: *Three, right, three's been the absolute best. Four? (pauses)*

Child 3: *is going down!*

Mr Phil: (lowers his voice) *is going down. Somebody said, well, shall we do five? What will I do if I do five?*

Child then heard singing “*down down down...*”

It was also noticeable that Mr Phil listened to what every child had to say to him, as if it was important to the whole of the outcome of the lesson. Such active participation by the children, and the way he interacted with them, appeared to place them in joint charge of solving the problem. Later, when I asked him whether he did this deliberately, he told me that he liked to give the children the illusion of being in charge of their own learning. In this way he was guiding the processes involved in learning through his communication strategies, as well as transmitting the content of the syllabus.
11.8. Framing and connecting

It is now an accepted view that the process of categorisation plays a crucial role in the formation of mental constructs.\(^7\) Language can be thought of as operating at many conceptual layers, as sentences may contain within them information about a number of different levels of abstraction. How people perceive events or activities depends on the categories to which these are assigned. There are many linguistic and non-verbal ways for communicating the overall framework for learning.

The words that people use, especially at the beginning of statements, seem to influence the subsequent development of their listeners' internal representations and abstractions. Is learning classed as 'exploration' or 'chore'? Are learners 'participants' or 'subjects'? Is the task something that is 'possible' or 'impossible'? All these are examples of categories which influence both students' and teachers' responses. Teachers may communicate categories informing students of the nature of learning, or of themselves as learners, verbally, or non-verbally. It seems that we cannot, not categorise, whenever we communicate.

Bateson (1972) pointed out that such frames are essentially messages that organise the perception of the message by the recipient. Such frames inform people to "attend to what is within, and do not attend to what is without" (Bateson 1972:187). Non-verbal communication is especially powerful at transmitting information about the category to which the information is to be assigned. Watzlawick et al (1967) explored these foundations for the study of meta-communication (that is, communication about communication), suggesting that the non-verbal, analogue part of a spoken message acted at a higher logical level than words. This implies that aspects of communication such as body language and voice tonality are powerful.

\(^7\) I have reviewed this further in Chapter 3.
transmitters of information about categorisation. This influences perception as it creates a deductive framework, which affects how the information is then processed at different levels of abstraction, as well as at the level of internal representations.

Thus both framing and categorising appear to involve the universal epistemological process of creating connections between different conceptual entities. Such connections can occur between internal representations and the abstractions that have been generated from them. They are also involved in deductive and abductive processes. How learning is categorised, verbally or non-verbally, also affects people’s perceptions of outcomes, which are connections to future events. Here again the almost fractal nature of the model appears, because when considering connections, future outcomes are also part of the dynamic of processes such as causal thinking and the TOTE process.

Beliefs contain a multiplicity of different types of connections. When using language, a teacher is continuously creating connections of many kinds, including complex equivalences and lost performatives. These processes are inevitable, because they are both embedded in language, and evoked through the words that we use. They may also be fundamental thinking processes. In my own teaching on the Riyadh course, I deliberately set out to create complex equivalences between learning and discovery, exploration, and the students’ own abilities to deal successfully with a novel topic. This meant deliberately giving them new lost performatives that then acted as new yardsticks for the measurement and judgement of their own performances. Moustakas, in his descriptions of the phenomenological approach, wrote “when one looks with confidence, what one sees will be radically different than when one looks with doubt” (Moustakas 1994:71). Such different, yet apparently critically important perceptual frameworks may be created through verbal or non-verbal means.
The connections that language can make or break may be as numerous as words themselves. It is probably impossible to put a number on them. When we teach, we weave a web of abstractions and connections that influences how learners process information. Connections are perhaps one of the most universal and influential strands of the web. The complex equivalences, cause effect patterns, lost performatives, categories, and mind reads that are part of the architecture of beliefs are communicated through the teacher’s words. They may also influence how learners then construct their knowledge.

11.9. Language and future outcomes

Nunez and Freeman (1999) urge that the time has come for educationalists to return to the idea that intentions and emotions are of prime importance to our understanding of cognition. One of the most surprising aspects to emerge from this inquiry was the extent to which changes in people’s belief systems altered their thinking about what was possible for them in the their own futures. This suggests that the complex conceptual structuring that I have been exploring is not time bound; that time itself may be a significant dimension in the construction of understanding. By this I don’t only mean that such structures have a temporal duration; rather, that they include information about the future. This may set a direction, consciously or unconsciously, for future activities. Expectations and intentions may thus be considered as a part of such conceptual structures.

It is possible that such changes may directly influence how the TOTE process is used. In a cybernetic model, systems cannot function without the need to calibrate to an internal representation of future events. I have suggested that the phenomena of internal representations and their sub-modality variables also play a significant role in the construction of knowledge, and may be influenced by communication. This may in turn influence action. For instance, Bickerstaff (1993) has demonstrated that verbal encouragement by Physiotherapists to patients performing physical
tasks significantly improved their (the patients') performance. She also cites work where it was claimed that the louder the encouragement from the physiotherapist, the greater were patients' responses to strength tasks.

It is no longer novel to propose that intentionality is an essential part of the behaviour of systems. Zelazo and Frye (1997) have suggested that cognitive scientists have failed to clarify the functional role of consciousness in the production of goal directed activity, and suggest a model for the carrying out of intentions that is not dissimilar to the TOTE, yet fails to cite Miller's model, (Miller et al 1960). Freeman (1999) has suggested that "intent comprises the endogenous initiation, construction and direction of behaviour into the world," (Freeman 1999:147). He explores the possible neurological bases for the existence and fulfilment of a system's goals. Intention and causality are interlinked; Freeman further suggests that Hume's belief was that causality emerges in the minds of observers. This raises the question: what are the links between people's belief systems, and how they then generate the information about future events to calibrate to? Could there be causal links between the conceptual structures that are created, and the conceptual processes that are activated for the perception of a task.

People's constructs of their own future outcomes may also act on their perception in a way similar to the effects of categories. They may thus exert powerful roles in people's perception of their different life events. Certainly, in my small sample, people who had changed their beliefs about themselves also changed their approach to their own future goals. Sideridis and Kaissidis-Rodafinos (2001) propose that a learner's goals are the strongest causal agents of success, especially for students who can do a lot of studying. Freeman suggests that "wholeness is revealed in the striving for the fulfilment of the potential of the self through its lifetime of change." (Freeman 1999:47).
It is as if we may be continuously creating and recreating our future. These futures will be perceived through the filters of our constructs. Their formation of these constructs appears to be affected and altered through certain language forms, such as modal operators. I want to offer the following generalisation about what has emerged from this inquiry; namely that it is an awesome thought that how we communicate with our learners not only has a physiological effect on them, it also weaves a complex web of beliefs which then influences their perception of what is possible for them throughout life.

In this model, intentionality emerges as a vital aspect of people's constructs. It follows from this that the factor of time becomes another crucial aspect to how we know. In our constructs there are connections between numerous pasts, presents and futures. Not only is an awareness of time critical to the successful operation of the TOTE process, it also acts as a context for changing perceptual positions, which I suggest is shown by my findings described in Chapters 6, 7 and 9. Both time and intentionality become integral processes in cognitive mapping. Some of my collaborators' introspections indicated that when there was a re-organisation of their own cognitive maps, then some of their perceptions changed. One in particular was their approaches to their own futures. Teaching and learning may therefore be as much about facilitating the creation of people's futures, as about learning content for exams and qualifications.

11.10. Searching for, and ordering information through inner dialogue

The notion of trans-derivational searching has been a concept long used in hypnosis, (Grinder, DeLozier and Bandler 1977). It proposes that when people hear words, they are directed into an internal search in order to make sense of the information they may contain. In my own interviews, I was able to observe how often my interlocutors' awareness changed. First they might attend to information from an
external source, then change to focusing on their own internal processes. Often this seemed to involve a search for their responses. Grinder, Delozier and Bandler (1977), suggested that people were, in this way, connecting surface structure to deep structure. It is as if, in searching, a TOTE was set up, where the outcome was to access the relevant information. The TOTE process is only exited (or ceased) when the conceiever is made aware of the information. In doing so, it may well undergo re-organisation. As part of the model that I am proposing, I suggest that such searches are another essential process in making sense and constructing information. When I was interviewing my collaborators, I noticed that they often paused after I had spoken, and then repeated my words to themselves. Only then did they appear to search internally, and access the internal representations that were evoked by my words. Their own inner dialogue, whether spoken or not, seemed to play a part in this process. Carruthers (1996) has explored the significance of inner speech, and concludes that it plays an important role in thinking.

Questions seem to emerge as one of the most powerful language structures for generating trans-derivational searches. It was noticeable how often Mr Phil used questions in his maths lesson. The whole of the lesson could be interpreted (at the process level) as a series of guided trans-derivational searches. It would be interesting to know what effects such searches have on people’s learning. This is one of the main differences between the ‘transmission of knowledge’ style of teaching, and one in which learners are treated as co-discoverers. Such searches must, I suggest, have the effect of allowing each learner to structure what is to be known in their own ways. Again, causality re-appears as part of this dynamic; when learners are actively engaged in their own ‘knowing’ then it is likely that they also experience themselves as being the agents of their own learning.

Another aspect of trans-derivational searches is the Zeigarnik effect. (Mazur 1996). Zeigarnik proposed that when human consciousness is
presented with incomplete, paradoxical or contradictory information, then it seems to be pre-programmed to search for order and meaning so that the person can achieve closure. Originally this concept was used to describe a psychological process, which was generated after the individual had experienced traumatic events. It is as if there is a drive to make sense, to order and categorise, which can also be explained as a process aimed at exiting the TOTE. This is thought to occur when the afflicted person has reached the outcome of having made sense of events by assigning them to a meaningful category.

Lebiere and Lee (2001) believe that intentions are even critical to how people retrieve information. They describe what they term the 'intention superiority effect'. This was that the time that their subjects took to retrieve memory items related to uncompleted or partially completed intentions, was faster than for those people with no intentions associated with the task. We seem to be able to set directions for the trans-derivational searches of our learners through our questions and how we present topics. As teachers, we also seem to be activating the internal dialogues of learners, which, in my small sample, appeared to catalyse their trans-derivational searches. We can also set goals and outcomes which affect how tasks are approached.

Internal dialogue may have many functions. In my interviews, my collaborators used it to make sense of my requests. It seemed to aid the processes that were used to search for and generate their responses. In the Master Practitioners’ interviews, there were some people who reported on the internal dialogues about themselves that they had in the remembered learning situation. Using internal dialogue to search for internal representations is different to using it as a commentary and judgement about oneself as a learner. Perhaps one of the processes that could be an essential part of learning is to encourage useful kinds of internal dialogue for the learner.
Inner speech was a topic which fascinated Vygotsky, who believed that it was not simply talking, rather that it had an additional function. In Robbins' (2001) account of Vygotsky's theories, she quotes Akhutina, who proposed that “For Vygotsky, inner speech is a particular independent aspect of verbal thought in which all the dynamic relations between thought and word are concentrated.” (quoted in Robbins 2001:51). However, there is little in Vygotsky's writings to suggest that he recognised the role of inner dialogue in trans-derivational searches; his views on inner speech were more that it represented the internalisation of understanding that had originated from an external origin. He did, however, hint at the idea that it had a role in sense making (Vygotsky 1939). It was also considered to be a 'controlling mechanism' (Robbins 2001:53). Robbins (2001) also suggests that Vygotsky thought of inner speech as part of the process of internalisation, which Robbins describes as a 'system of ontological transformations' (Robbins 2000:101). This seems to recognise that inner speech has important functions, and may even link to motivation, and perhaps a dawning recognition of its apparently powerful role in inner searches for meaning, ordering, and arriving at conclusions. There is some support for this view; Emerson and Miyake (2003) suggest that inner speech serves as an internal self-cueing device by retrieving and activating a phonological representation of the upcoming task.

Bandler and Grinder (1975A) were fascinated by Milton Erickson's abilities to enable his clients to change the way they perceived themselves and their problems. They identified that he used language to generate trans-derivational searches in his patients, suggesting that this was one of his most powerful therapeutic techniques. They suggested that Erickson deliberately sought to engage the unconscious part of clients' minds. This raises questions about what is conscious and what is unconscious? It does seem that when we use language to stimulate the epistemological processes of others, we are

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8 I have addressed this question in Chapter 3.
aiming to influence a process that may be mainly below conscious awareness. One of the aims of modelling with NLP is to discover more about these processes. It is coming to be accepted that much of our information processing occurs below conscious awareness. (I have reviewed this topic briefly in chapter 3). Perrig (1993) believes that there is evidence that many such processes operated below conscious awareness. These included making distinctions between different sense impressions (Sinneseindrücke), classification, comparison and ordering.

In taking a phenomenological stance, I can only describe the phenomena that have emerged, despite the temptations to theorise further. The role of internal dialogue in learning and making sense becomes an important part of this model of learning. Perhaps it is also a way for people to bring unconscious material into awareness.

11.11. The role of the construct of the self as learner; judgements and mind-reads

One of the most difficult concepts to define is that of the ‘self’. From an NLP point of view, the word ‘self’ is a complex nominalisation, a concretisation of something that may be both abstract and a process. Perhaps it is as complex a concept as that of beliefs. The ways in which the notion of self has been constructed has been explored elsewhere by many, for instance by Vrugt et al (2002), Lacan (1968), Bandura (1997), and Harre (1998). I observed that people occasionally revealed the complex equivalences that they had made between themselves and what sort of learners they were. For the purposes of explaining this model, I borrow from a Batesonian definition. Bateson struggled with the concept of self, recognising that it was a word that seemed to avoid definition. “Perhaps what each of us means by the “self” is in fact an aggregate of habits of perception and adaptive action plus from moment to moment, our immanent states of action” (Bateson 1972:242). Lakoff and Johnson (1999) state that the study of the self, ‘concerns the structure of our inner
lives’ (Lakoff and Johnson 1999:267), proposing that this structure is based on metaphor. Furthermore, they view causation as being one of the fundamental dynamics in people’s self constructs. Furthermore, Grush (2000), has proposed a neurobiological model which explains how people make distinctions between themselves as separate objects in the world.

I found that in my sample, people’s experiences of schooling had left them with interesting complex equivalences between their ideas of ‘self’ and what kind of learners they were. This was well illustrated by some of the Master Practitioners’ interviews, which I explored in the previous chapter. Dilts (1998) suggests that identity operates at a higher logical level than beliefs and values. He proposes that a key element in establishing a particular role or identity “involves defining the sense of mission a person has within the larger system in which he or she is operating”. (Dilts 1998:35). In this view, self or identity is linked to a person’s constructs of their own future, and what is possible for them. In another sense this translates into ‘what can I cause, what can I make happen?’ It was noticeable how many of the participants actually re-organised their ideas about what they believed was now possible for them in the future, after the course. Here again, the dimension of time becomes one of the factors in people’s construction of themselves. Our educational systems continually encourage comparison, whether it is the individual marks for a piece of homework, or school league tables. This presupposes the existence of a scale, against which one can be measured and perhaps defined. Thus lost conceiving of performatives and comparative deletions are the inevitable consequences of asking the question ‘what sort of a learner am I?’ The answer to this seems to act as an overall framework influencing people’s perception of a learning task.

In this model, every dynamic process is also an aspect of all the other processes that I have so far outlined. Thus, the idea of ‘self’ can be considered as a complex abstraction within which will be found all the other epistemological factors that are mediated through language. It
also operates as a filter through which people perceive what is possible (or not) for them. I have found that people’s ideas about themselves as learners have a remarkable longevity, yet (leaving aside various theories of personality) these ideas are only subjective constructs which have arisen through what people have been told, perhaps at sensitive stage in their lives, through the verbal or non-verbal messages from teachers and significant others.

Feedback, and how it is languaged at the levels of words and accompanying non-verbal messages, may be another influential way of creating or re-enforcing people’s beliefs about themselves as learners. I suggest this is an important aspect of my findings. This was illustrated by many of the extracts from the transcripts of the Master Practitioners’ interviews, where they reflected on the kinds of messages they had assimilated about themselves as learners from their past schooling. If communication is multi-level, then perhaps it is not irrelevant to ask what kinds of messages, spoken and unspoken, do learners receive and construct about themselves? What do they project on to others in the form of mind reads? I offer no simple solutions; only that this may be an area for further inquiry. I can only suggest that my inquiry shows that people construct information for themselves in ways that may be far reaching, yet below their awareness.

11.12. Comparison

Bateson proposed that another fundamental epistemological processes was comparison, (Bateson, in Donaldson 1991). In this he echoes Wiener (1948) who had proposed earlier that comparison was fundamental to our sense making. He also proposed that the ability to distinguish similarities, and differences, were vitally necessary to how we knew. Bateson believed that “any ongoing ensemble of events and objects which has the appropriate complexity of causal circuits and the appropriate energy relations will surely show mental characteristics. It will compare, that is, be responsive to difference”
The process of comparison is considered to be a fundamental cognitive process by Markman and Gentner (2000). Associated with the act of comparing is the notion of scalarity, that is, that we make use of 'internal scales' as part of our sense making processes.

Could there be hidden directives in language that evoke the use of a scale whereby judgements are to be made? Johnson (1987) suggests that scalarity pervades human thought. "Consequently, this ... value laden structure of our grasp of both concrete and abstract entities is one of the most pervasive image-schematic structures of our understanding", (Johnson 1987:123). He proposes that we are able to comprehend "virtually every aspect of our existence in terms of scalarity" (Johnson 1987:124). Clausner and Croft (1999) perceive scalarity as essential to understanding, and argue that such image schemas have a psychological reality. In language, quantifiers, words that originate from judgements, values, and even words such as sharp will, they suggest, be located at some point on a conceiver's scale. These ideas are similar to Bandler and Grinder's linguistic category of lost performatives, which I have described in Chapter 5. Clausner and Croft (1999) also suggest that scalarity operates as an epistemological device that transforms complex non-linear constructs into linear form. Again, one could use the explanatory metaphor from chaos theory (Gleick 1998); that there are underlying ordering principles which make patterns out of the chaotic and myriad bits of information that the nervous system processes every millisecond. Among these may be scalarity and comparison.

The use of a scale, however subjective, is impossible without the ability to make comparisons, to evaluate and discriminate between the perceptions of sameness and difference. Bateson (1972) considered comparison as one of the fundamental epistemological processes operating within a successful cybernetic system. It is also an essential part of TOTEing. Cybernetic systems could not use the TOTE process, that is, to know when a task has been accomplished.
without the ability to compare the present state of the system with the desired outcome to which it is calibrating. It could therefore be proposed that the act of comparing could be a universal process in human activities and information processing, (Markman and Gentner 2000). Mr Phil’s Maths lesson encouraged the learners to keep comparing; he was constantly encouraging the children to compare the volumes of the different sized boxes they were making in order for them to reach the generalisations about the turning value problem. He even encouraged them to be ‘wrong’ with their answers, so that the learners kept up the impetus of learning, and finding new ways of acquiring their insights.

Comparison, which is the ability to attend to both similarity and difference, may be one of our basic ways of making sense. It may also be odious. It may cause students to develop beliefs about themselves as learners by comparing themselves unfavourably with others. The language of comparison seems ubiquitous; any words that evoke the use of an internal scale effectively activate this process. All language structures having the qualities of lost performatives and comparative deletions as well as many adjectives and adverbs appear to elicit these processes. Comparison is also needed in order to categorise information; to be able to connect ‘similar things’ and distinguish them from others that are not the same at a higher level of abstraction. This seems to be unavoidable to the act of classification. This may be another area for further inquiry.

11.13. Factors that appear to generate or inhibit learning

In both the transcripts of my own interviews, and those of the Master Practitioners, there was evidence that people could access learning experiences which were associated with a particular (and often memorable) kinaesthetic sensation, which were then linked to an emotional state. There is currently a growing interest in the importance of studying the effects of emotional states on cognition; Tart (2000), whose main interest is in altered states of consciousness,
suggests that emotions such as rage, depression or ecstasy could be viewed as altered states. He goes so far as to compare states of consciousness to Kuhn’s (1970) paradigms, claiming that they act “like a set of blinkers” (Tart 2000:217) which produce their own complex interlocking sets of procedural rules and theories, which then lead to interpretations specific to that emotional state. It may be that learning is state dependent; that people learn more easily in some emotional states that in others.

One of the first people to note this was Tolman (1948), thought to be the originator of the term cognitive maps. He urged that “we must in short, subject our children and ourselves ... to the optimal condition of moderate motivation and of an absence of necessary frustrations whenever we put them before that great God given maze which is our human world”, (Tolman 1948:208). The links between people’s physiological and emotional states, and their abilities to process information is currently a fertile field for exploration, (Harber and Pennebaker 1992, Bower 1992, Tobias, Kihlstrom and Shacter, 1992, Yair 2000). More recently, Bibby (2002) has investigated the role that “shame” plays in the learning of mathematics. There is also evidence to indicate that degrees of physiological arousal, emotion and attitude have a part to play in how a learning task is approached. (Revelle and Loftus 1992, Teglasi and Rothman 2001, Papanastasiou and Zemblyas 2002, Hackbath, Grover and Mun 2003).

One of the most interesting aspects of Mr Phil’s lessons was how he controlled the emotional states of his pupils as part of his classroom management. Discipline seemed to come secondary to his control of the emotional states in his classroom, so that learning was interesting and fun, driven by a relaxed curiosity. He also controlled the levels of arousal of the class; just enough to generate enthusiasm, not enough to create disorder.

Another aspect that emerged from studying the transcripts of my interviews and those of the Master Practitioners, was the many times
where people reported on sub-modality distinctions in more than one of the sensory modalities of their internal representations; often there were apparently distinctly experienced bodily states associated with different experiences of learning. It was as if people’s construct of learning had a physiological correlate; certain kinaesthetic sensations being inextricably linked to visual and auditory memories. Such links are known as synaesthesias, where two different modalities are experienced at the same time. For instance, recalling a pleasant holiday experience may evoke both feelings and pictures, which are linked as two aspects of the same phenomenon. Damasio (2000) believed that even the feelings which “make up the backdrop of each mental instant are images, ... somatosensory images, that is, which mostly signal aspects of the body state,” (Damasio 2000:319). He considered that the underlying mechanisms producing these phenomena were neural patterning mechanisms. It may thus be impossible to separate the construction of knowledge by individuals from their physiology, whether it be that of the brain or the rest of the body. The two can thus be considered as two aspects of the same anatomical and physiological information processing system.

One aspect of teaching and learning that emerges from this is that learners’ states could be directly affected by the communication of others. I suggest that this is where non-verbal messages, transmitted through body language and voice tonality, may play a role. Perhaps this is an aspect, which is influenced by how something is said. Mehrabian (1971) proposed that “we can say that people’s implicit behaviour has more bearing than their words on communicating feelings or attitudes to others”, (Mehrabian 1971:77)9. Watzlawick et al (1967) explored the notion that meta-communication, that is, the non-verbal message about the message, operated at a higher logical level than words, and therefore categorised the contents of the verbal part. Perhaps the emotional state that is created in a classroom is yet

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9 Mehrabian (1971) also tried to quantify the amount of information that was transmitted through voice and body language. He has been much criticised for this. I do not believe that it is possible to reduce such complex interactions to numerical ratios.
another way of categorising the activities of learning. This in turn may influence perception, the generation of future outcomes, beliefs about learning, self-efficacy, and much else.

11.14. Epistemological processes as part of a systemic network; a working hypothesis.

On page 310 I presented a linear listing of the epistemological processes that I suggest play a role in the construction of knowledge, and which are used by, and activated through language. Such a list does not give a sense of the complexity of their interactions. I suggest the hypothesis that each of the major categories of epistemological processes that I list do not operate singly, but always in conjunction with others, either actually or potentially, as a non-linear, systemic network. Each process operates as parts of a greater whole, in order for us to make sense of the chaos of incoming information, and thus form our mental constructs.

Let me explore this suggestion further, using the TOTE as an example. I attach a number to each process for clarification in my exploration of the possibly systemic structure of epistemology, and diagrams on pages 348 and 349 that give an overview of the model.

In diagram 3 (page 348) I give an overview of the hypothetical processes used to make sense. In diagram 4, (page 349) I suggest that in order to calibrate to a future outcome using the TOTE (1), there must be an internal representation (2) of the desired outcome. We appear to calibrate (3) to an internal representation (2) of a future outcome, continuously comparing (6) the present state with the desired outcome. The outcome itself may act as a category, (4) which operates at a higher logical level, influencing the configuration of the internal representations and their sub-modalities. In order to process feedback, (which is information about the extent to which an organism has or has not achieved an outcome), the perception of sameness and difference (5) play a crucial role.
Negative feedback is 'news of difference' (Bateson 1972) in order for the organism to 'know' that the goal has not yet been achieved. This brings in the fundamental role of comparison. This may also involve the use of an internal scale by which information is judged, (6). When people's achievement and their perceived outcomes are the same, then the TOTE can be exited, because then the system 'knows' that the task has been completed. The way an outcome is achieved is dependent on the organism's neurology and state of physiological arousal, (7). We could add that functions such as the trans-derivational search (TDS) (8) is run by the TOTE process, (or how would we know that we had found the information we were looking for?) The TDS is itself often mediated through inner dialogue. This uses words, which could be thought of as digitalised information, (9). They are of a different logical type than analogue processes. (Bateson 1972).

How an activity is performed is influenced by past experience and beliefs, in the construction of which many kinds of connections and abstractions play a role, (10). Time (11) is also an essential component of the TOTE, as it involves awareness of both present and future.

Engaging in a TOTE process may also involve evaluation of the effectiveness of the task, which not only involves beliefs (10), but also changing perceptual positions in time, (12). Each of these steps may also depend on the system's ability to create internal representations. Every one of these patterning principles appears to be different aspects of the act of knowing.

It is as if these strange aspects of consciousness operate more like a complex system. The mind is not a static structure, neither can it be understood by superimposing on it a linear reductionist methodology, (Gleick 1998). Perhaps these epistemological processes are some of the patterning principles, which are proposed as underlying organising
factors in chaos theory. Gleick describes these as "Patterns born among formlessness: that is biology’s basic beauty and its basic mystery", (Gleick 1998:299).

11.15. Conclusion

This has been a complex terrain to explore and map. The resulting map is offered purely as a hypothesis. The map is not the territory.

I have proposed when we know, we may do so at a number of different levels, which I have outlined in Diagram 1 (page 306). I have also described some of the main epistemological processes, which I suggest are active in the construction of knowledge, and are communicated through the language and style of a teacher or trainer. I have listed these in Diagram 2, (page 310). However, these are not separable into discrete functions. What has emerged from these explorations is the apparent impossibility of separating one epistemological function from others in the human act of knowing and constructing internal maps. They are all a part of the larger function of making meaning. The epistemological processes themselves connect with other dynamic aspects of the system such as language, sensory input and cognitive mapping, which are summed up in diagram 3, page 348.

These processes seem to be inter-dependent and to occur again and again at various levels of complexity, whether in the formation of simpler constructs such as insights into a mathematics problem, or at the more complex level of the build up of a conceivers’ beliefs and identity about themselves as a learner. I propose that these processes are mediated through language, through its syntactic and semantic structures as well as through non-verbal means. If these views have any validity, then good intentions on the part of a teacher are not enough. This hypothesis involves a profound ontological shift to realise that a teaching method may even influence a learner’s physiology; that when we communicate we may cause a myriad of
conceptual and physiological changes in others. In cybernetic theory, whenever there is communication between people, then they become a system, where every part can potentially influence other parts. A system also has emergent qualities, which are not predictable from a study of its parts alone, (Checkland 1981, Gleick 1998). Language may be one of the most potent tools for the development of knowledge in human systems. Teaching could be said to be about 'languageing' the thinking of others. This could have implications for the training of teachers, which I explore in the next chapter.
Diagram 3. Possible interactions between language and cognitive mapping
Diagram 4. Possible interdependence of some epistemological processes
Chapter 12. Some Thoughts on the Implications of this Inquiry for Teaching and Learning.

The reality that we impute to the 'worlds' we inhabit is a constructed one. ... Reality construction is the product of meaning making shaped by tradition and a culture's toolkit of ways of thought. In this sense, education must be conceived as aiding young humans in learning to use the tools of meaning making and reality construction, better to adapt to the world in which they find themselves and to help in the process of changing it as required. In this sense it can even be conceived as akin to helping people become better architects and better builders. (Jerome Bruner 2002:10)

12.1. Introduction.

The model that I have proposed in this thesis arose from my reflections on, and analysis of data that suggests that there may be close links between the way in which teachers communicate, and the epistemological processes that are activated in their learners as they construct knowledge. This implies that there may be two distinct but related aspects to guiding learning; one is the transmission of the content of the subject matter, and the other involves activating the processes whereby specific kinds of learning may be engaged, and conceptual maps developed. I argue that this is a vital distinction to make.

This dichotomy, (of which I am aware in my own practice as a teacher and trainer) aroused my curiosity about what teachers are taught about language and communication. I also wondered about how teachers' communication skills were evaluated in the classroom. I was intrigued to know what teachers are currently taught about communication. This chapter is the result of this inquisitiveness. It aims to indicate, through soundings and informal inquiry, the extent to which the issues raised are already reflected in teacher training and development. The chapter does not purport to be a systematic study
of these questions. The intention is to help assess some possible implications for practice.

Much of the material in this chapter is drawn from a small number of soundings. I spoke to a Headteacher and an Ofsted inspector to find out how communication was evaluated in the classroom, and whether there was any recognition that language activated epistemological processes. I also include the experiences of three newly qualified teachers, who had recently undergone PGCE training in three different institutions.

I review some of the information that I was able to gather on the questions from a variety of official guidelines for the training and evaluation of teachers. Finally, I include some of my reflections on the literature for the training of teachers at the Open University, drawing out some generalisations about their approach to language in teaching and learning. I then review the implications of the model that emerged from this inquiry for teacher training programmes at all levels, advocating more of a focus on the subject of communication and its possible roles in the creation of cognitive maps.

12.2. Ofsted sources

The Ofsted Handbook on the Guidance on the Inspection of Secondary Schools (HMSO 1995) contains pointers on what inspectors are looking for when judging teachers and evaluating classroom practice, yet does not address communication as such, except by implication. Criteria that it lists include:

- The teachers should show knowledge of the subject area
- Set high expectations, challenge, deepen knowledge and understanding,
- Employ methods and organisational strategies which match curricular objectives
• Manage pupils to achieve high standards of discipline. (HMSO, 1995).

The following description of good teaching is couched in abstract generalisations, (let alone the extensive use of nominalisations, which I italicise). “Good teaching makes clear the importance of application, accuracy and good presentation, and the need to use critical thinking, creativity and imagination. It provides the stimulus, the knowledge and the methods for pupils to do their best in all these respects. Teaching should provide opportunities for students to take increasing responsibility for their own work.” (HMSO 1995:72).

These nominalisations are essentially descriptions of processes written as abstract nouns. They do not inform the reader about how precisely these activities are evaluated. My view is that all of these factors are achieved through the way that information is languaged in the classroom. They are also influenced through both verbal and non-verbal means, and may be processed consciously and unconsciously.

The Ofsted Handbook goes on to state what inspectors should consider when observing teachers’ teaching methods.¹ Again, these focus on processes, which according to the model I propose, are all mediated through language structures and ways of communicating. However, this is never explicitly addressed. The closest that these guidelines come to evaluating communication is that inspectors should consider how well a teacher manages explanation, questioning and discussion.

In order to find out more about the Ofsted approach, I approached the school where I had originally observed Mr Phil’s maths lesson, Exposition or explanation by the teacher is informative, lively and well structured, the teachers use of questions probes pupils knowledge and understanding, and challenges their thinking, practical activity is purposeful in that pupils are encouraged to think about what they are doing, what they have learned from it and how to improve their work, investigations and problem solving activities are efficient in helping pupils to apply and extend their learning in new contexts. (HMSO 1995:73).

¹ Exposition or explanation by the teacher is informative, lively and well structured, the teachers use of questions probes pupils knowledge and understanding, and challenges their thinking, practical activity is purposeful in that pupils are encouraged to think about what they are doing, what they have learned from it and how to improve their work, investigations and problem solving activities are efficient in helping pupils to apply and extend their learning in new contexts. (HMSO 1995:73).
which were to have an Ofsted inspection in February 2003. The Headteacher invited me to go and see her during the inspection, and to talk to one of the inspectors. I talked to both for about 35 minutes about the Ofsted guidelines, and the practice of Ofsted inspections in schools.

I was also intrigued by what, if any, theoretical bases were used as the underpinnings of what teachers are taught about language and the effects of wording. Taking soundings from an Ofsted inspector was one of my first ports of call.

12.3. The Inspector’s views

During my visit to the school, one of the inspectors agreed to talk to me during the lunch hour. He appeared very kind, friendly, enthusiastic, helpful, and committed to his mission of improving teaching, so that children enjoyed school. He wished to remain anonymous, refused permission for our conversation to be recorded, though gave me his assent to use his views, of which I made handwritten notes at the time. This account of our meeting is based on these notes. My questions to him were simple; what did he look for when evaluating a teacher’s communication skills in the classroom? What makes good teaching? What should teachers be taught about communication skills?

His answers were interesting, because they bore little resemblance to the somewhat mechanistic guidelines published by Ofsted. He brought a very human dimension to the rather abstract written recommendations of the Ofsted handbooks.

He said he looked for how long teachers talked, how they built on what was intended for the lesson, how clearly they stated and shared the goals of the lesson, how well the lesson was formatted, the extent of the teacher’s command of the subject, the teacher’s use of understandable language, the extent to which the teacher’s language
was geared to the level of understanding of the pupils, and how a teacher was able to improve pupils' communication skills and knowledge of technical terms.

One of his main aims was to evaluate the response of the pupils themselves. How long were they engaged in learning activities? To what extent were they 'in charge' of their learning? What state of mind, emotional engagement and joy in discovery did they demonstrate? In his view, teachers were catalysts, who should not only have a good knowledge of their subjects, but also the desire to share it with others.

When I asked him what he thought teachers should be taught about communication, he replied that he believed that an integral part of teacher training should be drama, rhetoric and voice projection. Teachers were "thespians within their little theatre". He then went on to offer the view that, in his experience as an Ofsted inspector, the quality of the teaching of the expressive arts was better than that of any other taught subject. He also added that teachers should be able to learn, think, evaluate and reflect on their practice, so as to raise the awareness of what they were doing.

He thus recognised the importance of the factors I would describe as state, feedback, TOTE, goal setting, inductive and deductive processes (though he pleaded ignorance about abduction) for learning, though he did not use these terms. He also recognised the significance of pupils experiencing themselves as being at cause in their learning. These are some of the factors I propose as fundamental epistemological variables involved in the construction of knowledge. He appeared somewhat baffled yet interested when I mentioned that I believed there were links between language and how learners constructed knowledge; it was clear that he recognised many of the aspects that I believe are involved in 'good' teaching, yet there was no stated theoretical framework to his views, nor any knowledge of the area of research of this inquiry.
I mentioned to him that I had found that internal dialogue seemed to play a role in learning; he responded that he believed that one of the most telling ways of evaluating the success of a lesson was to stand outside the classroom door as the pupils came out, and listen to what they had to say about the lesson.

This was a useful insight into how teachers' communication skills were evaluated by one committed and enthusiastic Ofsted inspector, but told me little about what was being taught about communication skills to aspiring teachers, and those doing in-service training.

12.4. The Teacher Training Agency (TTA)

One of my next ports of call was the Teacher Training Agency. I telephoned their information desk, and asked what guidelines there were for the teaching of communication skills to those wishing to teach. This question was greeted with a certain amount of bafflement. I was passed on to several people, none of whom were able to answer my question. After several abortive attempts, I reached someone who, in answer to my question, told me that their guidelines emphasised management, attitude and the ability to handle multi-cultural situations. I was unable to obtain answers to more specific questions about the content of what is taught about communication, being told that it was 'up to the training providers to interpret the TTA guidelines in their own way'. They kindly forwarded a copy of their handbook of guidance, Qualifying to Teach which the TTA produces for initial teacher training providers, (TTA 2002). This outlines the 'standards' that qualifying teachers are expected to achieve in a number of fields.

Little in these standards is immediately identifiable as specifically referring to communication skills. Some of them assumed the importance of effective communication skills in the context of promoting good behaviour. Standard S2.7 declaims that "Those
awarded Qualified Teacher Status must demonstrate that they know a range of strategies to promote good behaviour and establish a purposeful learning environment” (TTA 2002:34). Among the evidence for the achievement of this standard was “Trainees could [...] demonstrate their knowledge of effective behaviour management by the approaches they use in the classroom, for example: teaching assertively, maintaining a brisk pace to their lessons, setting and maintaining high expectations, using their voice effectively, using praise and encouragement, asking carefully formulated questions, and intervening in a timely way to maintain or re-focus pupils on task” (TTA 2002:34).

For teaching at the level of Key Stage 3, the TTA manual urges that those “awarded Qualified Teacher Status must demonstrate that they have high expectations of pupils and build successful relationships centred on teaching and learning. They establish a purposeful learning environment where diversity is valued and where pupils feel secure and confident.” (TTA 2002:51). The evidence that assessors are required to look for includes: can the trainee encourage pupils to expand on topic, express their views on different issues, reflect, evaluate and learn from mistakes?” (TTA 2002:51). In the standards for delivering effective lessons, (S3.3.3) the TTA urges that those judging teachers should consider the extent to which they support pupils’ understanding of the nature and purpose of the lesson. “Can the trainee provide collaborative learning? Can the trainee employ interactive teaching methods to promote questioning, reflection, observation, critical thinking [...] discussion and dialogue?” (TTA 2002:58).

From these few extracts, it is apparent that these activities need teachers with a sophisticated knowledge and understanding of the art of communication, as well as its complexity and theoretical bases. Yet nowhere is the teaching of communication skills directly addressed. The TTA does not directly set standards for communication skills per se, yet everything that they urge should happen in a well
run teaching situation is implicitly based on a teacher’s skill in the effective use of language and non-verbal messages. Teachers are furthermore expected to have good background knowledge of their own subject, including its theoretical basis, yet the means whereby these are transmitted to others through language is never directly addressed. The implication is that teachers learning to communicate within the context of schools and colleges are not offered communication as a subject with its own theoretical underpinnings and practical experience. Despite the recognition that communication is critical to teaching, it is not one of the official Standards for the training and evaluation of teachers set out by the TTA.

The TTA publication *GTP Needs Assessment and Training Plan, a review of good practice* (TTA 2002A), makes clear that the courses are driven by the need for students to achieve certain stated standards. “The Standards are not used as a framework for planning but are organised in the training plan as outcomes” (TTA 2002A:4). This document urges the use of a wide variety of training activities, such as taught courses, workshops and seminars. In the section outlining the ways in which tutors should plan their feedback sessions with students in teaching practice, there is again no mention of language skills *per se*. Similarly, in the list of examples of training activities within and beyond the classroom, there is no mention of communication training, public speaking, presentation skills, or understanding the possible relationships between language and thought, let alone the ways in which language could influence the learning process of individuals. It is surprising that these do not appear as core subjects.

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2 “The focus of the school based tutoring meetings can be planned for each term and most frequently may include:
- Review and verification of evidence in the trainee’s portfolio
- Subject-specific training
- Discussions on lesson planning, teaching and assessment
- Discussions and feedback of classroom observations
- Review of the implementation of the training plan; and
- Target setting for the trainee. (TTA 2002A: 5-6).
In another document published by the TTA (1997) *Deputy/Headteachers' views on accessing and using research and evidence-results of a pilot survey*, which reports on an inquiry into Deputy Heads' and Heads' uses of research, there are some statistics indicating the kinds of research papers they had consulted, and what types of research they would like to see carried out. The greatest number of references that had been used referred to aspects of learning. Classroom processes and teaching styles (under which communication could be considered to be subsumed) were seventh in order of frequency of consultation. The perceived research needs of teachers, however, placed comparing the effectiveness of different teaching strategies as the highest priority, closely followed by models of effective classroom teacher behaviour. These last two could, by implication, hint at an interest in, and perceived need for more on communication skills.

What of the Further and Higher Education sectors? A similar picture emerged. I first approached the Further Educational National Training Programme (FENTO) by email, who recommended that I download their publication *FENTO Standards for Teaching and Learning* from their website, (FENTO 2002). Again, communication as such is not explicitly addressed, but implicit in many of their published standards of attainment. In Section D (FENTO 2002), called 'Managing the Learning Process' the enthusiastic researcher experiences a sense of *déjà vu*. It urges that teachers should aim to achieve an interactive, safe and productive learning environment, maintain learners’ interests, redress poor motivation, set tasks that foster curiosity and creativity, encourage learners to take responsibility for their own learning, use group work effectively, set tasks, give constructive and relevant feedback, and “use a range of communication skills and methods appropriate to the subject being studied”. Here again, communication is implicitly central to effective teaching, yet it is not identified as a subject that deserves to stand on its own, as perhaps the most important catalyst for achieving the stated good learning practices!
A trawl through the publications on United Kingdom Central Council for Nursing (UKCC) Standards for the preparation of teachers and lecturers of nursing, midwifery and health visiting proved equally revealing about the dearth of information on the specifics of teaching communication to people qualifying to be educators. Again, the recommendations are couched in the form of Standards, which have to be met by the student in order to achieve qualified status. They state that they are ‘broad statements of principle’ which can be applied and developed in different ways in order for educational institutions to offer meaningful, adaptable and appropriate courses of education’, (UKCC 2000:5). The first programme outcome is titled ‘Communication and working relationships’. The subheadings, which state what this means in practice, do not address communication as such, but the word ‘relationship’ is mentioned several times,³ (UKCC 200: 6).

There are also recommendations for how to facilitate learning. These encourage teachers to attend to the development of an enquiring, reflective, critical and innovative approach to education and practice. It urges the implementation of a wide range of teaching and learning strategies, which are effective across a range of education and practice settings. For the programme outcomes, which give an indication of the content of the courses, communication and learning are addressed, but again in very abstract terminology. Communication is, however, perceived as linked to developing working relationships, understanding and support. Another programme outcome for the trainee is the facilitation of learning. Here, trainees are exhorted to demonstrate the facilitation of effective learning, as well as strategies for its achievement.

³ 1. Communication and working relationships, including
   a) the development of effective relationships based on mutual trust and respect.
   b) The development and maintenance of appropriate supportive relationships with students/registered practitioners.
   c) The fostering of student inter-relationships
   d) an understanding of how students/registered practitioners integrate into a new practice setting and assisting with this process.
The same patterns emerge in the advisory standards for mentors and mentorship. Here again the links between communication and relationships are stressed, as if they were conceptually linked. A criticism of this document could be that it presents communication as so closely linked to relationships that the two approaches could be considered as synonymous.

There are, however, some common themes that can be plucked out of these documents. Among them are the recognition of the importance of developing the autonomy of the learner, of providing an appropriate learning environment, (which could imply that the recognition of the state of the learner is important), the need for flexible approaches to teaching, and the importance of goals, and relationships. These are all supported by my inquiry, though I approach the area in greater detail. The recommendations are, I suspect, also more complex than those currently posited by received educational wisdom.

12.5. Newly Qualified Teachers (NQTs) report on their experiences of learning about communication.

I was curious to know what the experiences of newly qualified teachers had been of their training, and whether it had included any ‘input’ on the effects of language. These soundings only involved three NQTs, so as to obtain a brief glimpse into their experiences of their PGCE courses. Because the sample is so small, it is invalid to generalise from it. However, it was random sampling, in that each of them was teaching at the school where I had interviewed the inspectors, but came from different backgrounds. One of them taught English, the other Science, and the third Drama. Silverman (2000) warns that it may be dangerous to claim representativeness for such small samples. He also points out that much qualitative research is dependent on access to people. Thus I chose these three people, all of whom were women, as much for their accessibility as for the ‘snapshot’ that I hoped to obtain about their experiences on their
PGCE courses. Each one of them had attended a different training provider. After obtaining their signed consent, and my assurance that they would remain anonymous, I emailed each of them, asking for their responses to the following questions:

- Were you taught communication skills specifically during your PGCE course? If so, what sort of things did the course cover, and what theory was it based on?
- Now that you have had some teaching experience, what sort of things would you like to have been taught about communication?
- Were you ever told that there may be a connection between language and the development of mental models in learners?

The English teacher replied that she had had one seminar on communication, which stressed the importance of recognising the main senses that pupils used to learn. This encouraged her to present material so that it stimulated pupils visually, auditorily and kinaesthetically. She was also encouraged to use body language and gesture. The rest of this seminar was on developing multi-cultural awareness. It appears that no theory was addressed, neither was there any mention of the possible roles of language in the construction of mental models.

The Science teacher replied that she had not been taught communication formally. "We had a few lectures on class management, managing difficult pupils which included a little on how to communicate effectively with pupils, but that's about it." She also reported that she had had no specific lectures or programmes on the study of language. There was also no apparent theoretical basis to what she was taught. My second and third questions elicited the following response. "I was in the Science PGCE course. The answer

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4 The consent forms are included in Appendix 2.
again will have to be no. Not specific programmes or study on language”.

The third NQT, who taught Drama, responded to the first questions with this information. “I was taught about basic language to use in the classroom. For example making sure that the language we use was only positive that we never used negative phrases towards pupils”. She also vouchsafed that “there was no theory based on this but there might have been!” Amusingly, to the third question she replied “I remember a brief and very boring seminar based loosely on this subject. But I don’t think anyone paid any attention since the lecturer was boring us to sleep!”

Although these are only soundings, it is clear that none of these respondents had had any formal input into the critical importance of language structures and communication generally in the activating of learning processes, let alone what may be emerging about the ways in which languaging information could influence how mental models are constructed.

12.6. Classroom talk

Despite some reservations about how professional educators perceived the importance of understanding communication, classroom communication has generated considerable interest. It is increasingly coming to be recognised that classroom talk may play a significant role for learners. A glimpse at recent publications mentioned below shows growing interest in the role of different kinds of classroom talk, and there have been several attempts to evaluate its usefulness. The emphasis of this approach is to encourage the students themselves to learn useful ways of discourse, which facilitates learning.
Corden (2001, 2001A) investigated teachers who wanted to break out of the mode of 'traditional' classroom talk, and to examine the quality of teacher-student discourse during group work, recognising that social constructivists emphasise the interrelationship between spoken language and learning. He identifies how teachers can influence the production of the kinds of talk that facilitate learning, among learners. He urges that the oral discourse patterns prevalent in many classrooms need modification. He observes that successful peer group work depends on students having a shared understanding of the purpose of talk, which was not always the case. He distinguishes between exploratory language and reasoned evaluation, (which lead to successful peer learning) contrasting these with desultory and disputational talk, which seem to inhibit learning. Significantly, he also observes that when students perceived teachers in a non-examiner role, this influenced their approach to learning. He also suggested that there were distinct discourse markers that teachers could use to facilitate students to explore and question for themselves.

Tao (2003) set about teaching a group of students about the nature of science through stories about famous scientists, and peer collaboration. This author believes that stories had a considerable impact on students' understanding of the nature of science, yet also, paradoxically, confirmed the entrenched and inadequate views of some. His students apparently even showed selective attention to the parts of the story that appeared to confirm their 'inadequate' views. This was an attempt to understand different ways of instructing through how the teacher communicated, yet when I turned to the

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5 This he identifies as the IRE pattern, where the teacher initiates, the student responds, then the teacher evaluates the response.
6 These Discourse Markers included phrases such as
   I was wondering...
   I suppose...
   It could be...
   What if...?
   Don't you think...?
bibliography, there were no references about the literature on communication, metaphor, unconscious learning, let alone linguistics.

The work of Osowski et al (2003) is interesting because they explored effective ways of teaching medical students about the immune system. They found that presenting material with 'gaps' in it, so that the students had to fill in the missing information for themselves, improved their overall test scores in the subject. This is essentially an application of the Zeigarnik effect. There are however no references to this, nor is there any attempt to explore any underlying explanatory theory, existing or otherwise, (despite the fact that this paper had six authors!).

Haggarty and Postlethwaite (2002) make a case for the improvement of communication between students and teachers; again they focus on the learners' patterns of discourse. However, they also propose that there are some useful ways in which teachers can improve their classroom skills; these include using checking questions, 'why' questions, and giving opportunities for peer-peer self-reflection. Non-verbal communication is also included as a topic of interest; examples include giving students full attention, when talking to pupils altering their posture so that teacher and pupil are at the same eye level, giving negative feedback non-verbally, and positive feedback verbally, and ensuring that the seating arrangements in classrooms produce a sense of inclusiveness among learners. Again, there is little reference to any theory on which such recommendations are based.

Gray et al (2000) recognise the importance of teachers learning about communication. They observe that "a significant proportion of teaching and learning takes place in the classroom, and this cannot occur unless communication between teachers and learners

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7 I was very keen to read this paper, as the title said An Alternative Teaching Method for the Regulation of the Immune System. I read this to mean that there could be a causal link between the behaviour of the learners' immune system, and how a subject was taught. Alas, I misread this ambiguously phrased title.
themselves takes place" (Gray et al 2000:111). They recognise that language lies at the very heart of the teacher-learner communication process. They stress the importance for teachers to keep their talk in proportion, to use words that connect to the abilities and ages of their learners, and to be aware of the differences between the spoken and the written word. Despite the importance given to understanding the classroom communication, there is little reference to any theory about language and communication.

The Open University uses an approach to the training of educators that stresses the importance of teaching pupils useful ways of talking, in order to facilitate each other's learning. The implications here are that teachers need to develop an understanding of the usefulness (or otherwise) of different patterns of discourse, in order to facilitate their emergence among learners. They place considerable emphasis on the teaching of oracy and the facilitation of peer group learning. This is reflected in the DES Publication Language at work in lessons, Literacy across the curriculum at key stage 3. (Qualifications and Curriculum Authority 2001) The approach that is encouraged in this publication is the result of much of the work done by the Department of Education in the Open University. It is addressed to teachers, and contains suggestions and examples for the improvement of pupils' abilities to engage in useful ways of talking to facilitate learning. Mercer (2002) emphasises that teachers need to be able to encourage the development of constructive ways of talking among their pupils, even in "situations which are not continuously dominated by the presence of the teacher", (Mercer 1001:178).

The theoretical framework for this approach comes from the tradition of Discourse Analysis. This, as Potter (1991) has pointed out, is a

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8 This is well represented by their recommended reading, such as Moon, B., Mayes, S., Hutchinson, S. eds. (2002) Teaching, Learning and the Secondary Curriculum in Schools: A Reader London and New York: The Open University, Routledge/Falmer.
9 I am grateful to Professor Neil Mercer of the Open University for drawing my attention to this publication.
somewhat broad church, comprising more than one approach, whose aims were not the investigation of cognitive processes. In another Open University Reader\textsuperscript{10} for their students in Education, Hicks (2003), in her reviews of research in this field, and her analysis of classroom discourse genres, is clear that she believes that discourse could be understood as a mediator of children’s learning. Her approach is underpinned by the notion that knowledge is socially constructed.

Neither in how most teachers are trained, nor in the publications that are used as recommended reading, are the relationships between language and cognition directly addressed. They are however often implied. Although constructivism appears to dominate the approaches taken by teacher educators (Doolittle 2003), there appears to be no formal attempt to link what words are used by teachers, to how these may influence the emergence of cognition in their learners with the degrees of precision that my inquiry seems to support. The link is nevertheless recognised. Anderberg (2000) for instance, argues that the intentional-expressive aspects of language and thought have not hitherto been taken into close consideration in the investigation of learning.

12.7. What would it mean for teachers to know more about language and epistemology? A new Trivium?

There is currently some interest in new ways of training teachers in communication skills. Burchell and Dyson (2000) have explored the use of stories as an aid to reflective learning. Lee and Law (2001) urge that the language that teachers use may reinforce scientifically inappropriate conceptualisations in their students. Teglasi and Rothman (2001) have shown that the use of stories with young children showing aggressive behaviours can inform pupils about more

appropriate forms of behaviour. Valenzo et al (2002) describe how teachers’ gestures enhanced comprehension of instructional discourse. Barth et al (1997) claim that in medical education, where surgical residents have had training in communication skills, these develop more effective ways of teaching. However the authors do not refer to any theoretical basis for the communication skills that were taught. In medical education there is an increasing emphasis on the importance of acquiring communication skills; Wagner et al (2002) describe the design of structured training activities to emphasis key points about patient-physician interactions. Kennedy (2001) has written about the importance of teaching veterinary surgeons and medical students the art of empathy. Maguire and Pitceathly (2002) describe some key communication skills for medics, and how useful they were found to be. Vegni, Martinoli and Moja (2002) claim that training physicians in patient centred approaches to communication increased their perceived competence.

The approaches used by these researchers are not based on any clearly identifiable set of theories. There is a noticeable dearth of citations from the field of linguistics, let alone the new paradigms of cybernetics, systems theory, or other ways of thinking about the science of complexity as applied to human consciousness. Our understanding of teaching and learning may be enriched by the use of such approaches; it could allow for different ways of exploring and experimenting. However, the time could now be ripe to introduce some new theoretical underpinnings to what teachers study about language, and the complexity of human interactions. This could provide a focus for further investigations, discussions, and most importantly, research. There is a need to test such theories about human interactions.

In the mediaeval schools, the curriculum was based on the trivium and the quadrivium. The subjects of the trivium were grammar, logic and rhetoric, largely informed by the works of classical antiquity. A
new trivium for the 21st Century might be based on what is now known about how we construct our cognitive maps.

It would include a grammar that is based on the idea that different combinations of words have a distinct effect, and that much of their power operates at levels of consciousness that are barely within people's awareness. It could be the grammar of moving listeners from having a sense of being a passive recipient of knowledge, to being an agent of their own learning. Grammatical or syntactical structures can set categories to which information is to be assigned, can influence the direction of internal searches, can be echoed in people's internal dialogue, and can affect a variety of different logical levels of the 'system'. They can also influence peoples' sense of self, as well as the value, or otherwise, of what they are learning. They can generate moods, which may or may not be appropriate to learning. There are powerful words, which elicit strong physiological responses, such as the term 'failure'.

One of the most fundamental linguistic (and conceptual dynamics) in teaching is feedback; words can set directions for people's thinking, set goals and outcomes, and inform people about the extent to which these are being met. Most importantly, linguistic forms can also influence what happens to learners' internal representations, submodalities and physiology. They can also connect, or disconnect different conceptual entities, thus both creating meaning, and changing how it is made. Last but not least, it could include the profoundly metaphoric nature of discourse, and the implications of this for our knowledge building.

Rhetoric would address how the words are delivered, and would include the effects of non-verbal communication, including body language and voice tonality. Although this has not been a focus for my inquiry, there is nevertheless some literature on how non-verbal communication itself acts as a creator of categories, (Watzlawick et al 1967, Watzlawick 1997). I have said very little about the voice and
tonality; I noticed when observing Mr Phil's teaching, that he used his voice to great effect; creating moods of intrigue and excitement, calm, arousal, humour, whilst always retaining control. He told me that he had had training in Drama. It was no wonder that his lesson was both theatrical and highly informative.

Last but not least, we come to logic, not the dead hand of mediaeval syllogisms, but the new logic of cybernetic epistemology. This would recognise that we can code information at different levels of complexity, and that we can confuse different logical types and create double binds (Bateson 1972). It could also be a logic that recognises the epistemological necessity of the TOTE, and the power of people's goals to their thinking and acting. It would cover some of the main epistemological processes that I explored in Chapter 11 as necessary to the building of cognitive maps. These may be significant pre-requisites to learning. It could also include the logic of multiple perceptual positions, trans-derivational searches, and the effects of sameness – difference filters. It might also describe the ways in which human beings make sense of the myriad of bits of incoming information through the use of inductive, deductive and abductive processes, which always involves the deletion, generalisation or distortion of information thus constructed.

All epistemologies imply a presupposed ontology. In Bateson's cybernetics, he proposes that we may not really 'know' what is 'out there'; we build a reality through our senses and our physical bodies by means of an inescapable epistemology that both enables us to map the territory of our experience, yet constrains us by the paradox that we may never really totally 'know'. We are caught in the most fundamental of epistemological paradoxes, which is that the map is not (and may never be) the territory.
12.8. Conclusion

In this chapter, I have attempted to review some of the ways in which it seems teachers are currently taught about language and communication. I have done this by taking a small number of soundings, so as to obtain a somewhat generalised view. I demonstrate that there is an increasing interest for some in the educational community in the generation of the kind of talk which is useful to learners. This however, focuses mainly on learners’ rather than on teachers’ talk.

This chapter has considered how to redress the balance, by sketching out some contents for a hypothetical syllabus designed for a course for those training to be teachers. It is based on the notion of a new trivium, which emerged from my reflections on my findings. This encompasses developing an understanding of the different grammatical and syntactical forms that influence the creation of mental maps, the rhetoric that ensures an effective delivery through verbal and non-verbal means, and the logic of the epistemology that has emerged from this inquiry. Without these processes, the act of knowing as we do would not be possible.
Chapter 13. Reflections at the End of the Journey.

William James, in his Principles of Psychology (1890) wrote: "As we take ... a general view of the wonderful stream of our consciousness, what strikes us first is the different pace of its parts. Like a bird’s life, it seems to be made of alternate flights and perchings.” In their quest to understand consciousness, modern scholars apparently cannot agree on which direction the bird is flying, where it might perch, nor even what nature of bird it is. A mystery indeed. (Lewin 2001:69)

You see, whenever you think that you understand totally, that is the time to go inside and say, "the joke is on me". Because it is in those moments of certainty that you can be sure that the futile learnings have set in, and the fertile ground has not been explored. (Bandler 1985:156).

13.1. Introduction.

In this chapter I review some of my main research findings in a more critical light, stress what I believe may be some original contributions to our understanding of teaching and learning, and look back at my own research process, and at what I have personally learned from engaging in it.

Glaser and Strauss (1967) distinguish between theory generation and theory testing as different yet valid approaches to qualitative research. This inquiry is clearly in the former category. It has generated hypotheses and models about language and information processing. The main approach was the use of a phenomenological approach and some modelling under the umbrella of Action Research. According to Maykut and Morehouse (1994), the hallmark of the phenomenological approach is the discovery of propositions. Action Research (McNiff et al 1996), is about illuminating practice. “Such research aims at helping people make better sense of their lives, no mean ambition”, (Coulter 2002:203).
My main focus was to explore the inter-relationships between language and people's construction of their cognitive maps. The inquiry suggests that the use of our senses internally is an important aspect of our cognitive mapping processes.

The generation of the theories that I have written about, particularly in chapters 10 and 11, has been the culmination of a complex research process, involving an eclectic approach, which has brought together ideas and information from a number of different, sometimes apparently unrelated, disciplines. This approach belongs within the post-modernist tradition. According to Denzin and Lincoln (1998) "all research is interpretive, guided by a set of beliefs that guides action", (Denzin and Lincoln 1998:26). One of the threads running through the fabric of this work has been both the theory and application of NLP, against a background of cybernetic and systems theory.

NLP was used in both stages of the data collection. In the first stage, it was applied to interviewing a small sample of students about their deeply subjective experiences of their own internal representations and sub-modalities. In the second stage, it was used as a means of textual analysis, to elicit a generalised model of some basic epistemological processes, which may be mediated by language, and vital to learning. There is a sense in which this research project was also an evaluation of NLP as a potential adjunct to phenomenology, because of what is presupposed about the nature of consciousness, cognitive mapping processes and language. It does not seek to raise NLP above other approaches to textual analysis; the case is made for it to be considered as complementary to approaches such as Discourse Analysis.

One of my rationales for using NLP was that it claims to provide a way of modelling people's subjective experiences. This was the main thrust of my data gathering activities. Chapters 6 – 12 are my own reflections on the information that I was given by my collaborators.
My interest focused on modelling people's subjective processes when engaging in learning. In order to make sense of much of this information, I drew on a number of different approaches, ranging across linguistics, cognitive psychology, systems and complexity theory, cybernetics, philosophy and research methodology to provide the background theoretical matrix to my approach.

McNiff et al point out that “our thinking is already conditioned by what we believe in” (McNiff et al 1996:38), so my choice of literature was influenced by the need to explore topics such as cognitive mapping, and the wide-ranging topics that have developed from different approaches to the study of language. This included information about the type and use of mental maps or cognitive models. Here I drew largely from the field of cognitive psychology, the 'cybernetic epistemology' of Gregory Bateson, and many ideas of the founders of NLP, Richard Bandler and John Grinder and some of their collaborators.

Another area that I drew from was linguistics; I reviewed some of the more recent ideas in this area, and again used Bandler and Grinder’s distinctive approach to language. Their use of their meta-model, which I explored in some detail in chapters 4 and 5, was critical to this inquiry. The main reason for this is because it presents a typology of language structures, which are thought to relate directly to processes that are used in the making of meaning. Thus this has been as much an exploration of the epistemology of language, as a phenomenological inquiry into the nature of learning and making sense.

13.2. On the phenomenology of the relationships between internal representations and language

Integral to action research is the notion of reflexivity, which might be defined as a mental process in which one thinks about things by going back over them. (Phelps and Hase 2002:516).
My original research questions had been:

- How does language influence the formation of people's conceptual structures?
- What perspective does NLP offer on inquiring into the processes of teaching and learning?

For the first phase of the data gathering for this inquiry, I sought information about an aspect of our cognitive maps, which has been largely ignored in the educational and psychological literature, namely the phenomenon of internal representations. I suggest that an essential part of our cognitive mapping processes are internal representations. In using these, we re-create, as it were, on the 'inside', rich images of information coded through all the senses. Among these findings, and the detail in which I have presented them, I propose that information may be coded through all the senses. This is new to our understanding of the construction of cognitive models. Thus we use our senses internally to 'make sense'. This involves not only the conceptual abilities of the mind, but also some complex bodily and physiological processes. This implies that a more holistic view of learning may be useful, one where the whole of the person is perceived as involved, rather than learning being considered as only involving 'mind' or 'reason'. The paradigms that give the best 'fit' to this emerging model are those of cybernetics and systems theory.

In these approaches, phenomena are not reduced to their component parts, or distorted by false dichotomies such as the mind/body divide. Various different variables within a system are considered as operating interactively. They cannot be 'reduced' to one factor driving all the others. The science of complexity proposes that more complex systems give rise to emergent properties, which are not predictable through the mere study of their component parts. Maturana and Varela (1987) echo this; "we hold that the biological roots of knowing cannot be understood only through examining the nervous system;
we believe it is necessary to understand how these processes are rooted in the being as a whole”, (Maturana and Varela 1987:34).

Wiener (1948) proposed that the stored information of the mind lay on many levels of accessibility, that it was rich and varied, and always influenced by an individual’s affective and hormonal conditions. Bateson (Donaldson 1991) believed that the separation of what we experience into apparently clear categories was a creation of our mind and our own psychology. I discovered that the conceiver’s fleeting appearances of internal representations, and their changes, could be influenced by words and syntax. These could either come from another person, or through the individual’s own internal dialogue. I believe this to be a new contribution to our understanding of cognitive mapping, and making sense of experience. It may also be of interest to educators who take a constructivist approach to learning.

Throughout this research I was attempting to develop a model of our learning processes, which was intrinsically holistic, and not reducible to parts, or presented as a list implying any order of importance. Having teased out what I believe to be some of the vital epistemological processes without which learning cannot take place, and which are mirrored in syntactical structures, I drew on complexity and chaos theory to suggest that these processes operated holistically and interactively. Phelps and Hase (2002) have stated that in their view, complexity theory can be treated as a formal attempt to question how a coherent and purposive whole emerges from the interaction of simple and sometimes non-purposive components. I am not aware of any work that has attempted to show such interrelationships between language and thinking in such detail, and uncovered not just more about our ‘mental maps’, but also the means whereby such maps are created from the chaotic dance of information that assaults our senses. As Silverman pointed out, “human subjects actively participate in the construction of social and psychological realities.” (Silverman 1993:110). I hope that this study has addressed
some of the ways in which this happens, particularly through the
model of the interactive nature of some of our basic epistemological
processes.

I have presented a new model of learning, which can be viewed as
belonging within a constructivist approach. This was the culmination
of a long and complex modelling process, whose beginnings I
described in Chapters 1 and 2. It is now coming to be recognised that
chaos theory, and the science of complex systems, may have a role to
play in educational research. Doolittle (2003A) suggests that the time
is ripe for the introduction of a new metaphor system to our theories
about teaching and learning, urging that chaos theory may be a way
of gaining new insights. Phelps and Hase (2002) have furthermore
made the point that few authors have drawn an explicit connection
between action research and complexity; an approach which is still in
its infancy. My whole inquiry was illumined, from the start, by
cybernetic theory, which belongs, as it were, to the same family of
models as systems theory, the science of complexity, and chaos
theory. I thus offer both a new model of learning, and a different
metaphor system whereby we may gain insights into the complex
ways of how we make meaning.

In chapter 1, I suggested that the approach that I took was largely
constructivist, and influenced by the ideas of Vygotsky. I then used
NLP to investigate the phenomenon of learning in more depth.
Frawley (1997) cites Vygotsky's comment that “thought is not
expressed in the word, but is completed by the word. One might
therefore speak of the becoming (the unity of being and non-being) of
the thought in the word” (Frawley 1997:97). He further proposed that
the Vygotskian, interactive approach to language and thought
presupposes that every piece of information can potentially impinge
on every other. For Vygotsky, knowledge was mediated through
language, first from an external 'other', then internalised to become
part of the developing individual's thinking. Thus this inquiry may also
add to the Vygotskian approach.
13.3. Reflections on questions of validity and reliability

This brings us to the question of the status of the models I have put forward. Because the means of obtaining them was essentially phenomenological, this meant that the models that emerged were largely inductive in origin. They have not been tested or replicated, and thus, strictly speaking, only have the status of a hypothesis or sketch map waiting to be refined by further exploration. This would involve testing them, and even submitting them to falsification in the Popperian sense, (Popper 1969). This is what hypotheses are for! There is a sense in which this inquiry has been an adventure in mapping a little known terrain, and has relied on the use of a limited number of instruments. The material was obtained through a small number of collaborators, who shared their deep and personal responses with my two assistants and myself. James (1999), exploring the influence of a researcher’s autobiography on her research, has pointed out that the development of insight into situations was a “somewhat haphazard process” (James 1999:85). This was certainly the case with this inquiry. The apparent significance of people’s inner dialogues, for instance, only emerged during the course of the interviews, and was confirmed by the reading and re-reading of the transcripts.

There are of course limitations to both the data and my extrapolations. This is because I used a very small sample from a target population of people who had trained in NLP. Anderson urges that a target population should be clearly defined and its boundaries understood. (Anderson 1990). Thus one can only legitimately generalize about this particular target population. “One cannot generalise from a sample to anything other than the population from which the sample was drawn,” (Anderson 1990:197). However, my sample could also be included in the category of learners, so my extrapolations may be relevant to other learners. Nevertheless they remain as hypotheses, awaiting further testing.
The reasons for restricting myself to a handful of collaborators were twofold. Firstly, my small groups yielded a vast amount of information,¹ which provided me with much analysis and reflection. Secondly, I knew that the people involved could safely explore and share their inner worlds. As a practitioner of NLP I am cognisant of the possibility, however remote, that drawing people's attention to deeply subjective experiences may evoke repressed traumatic memories, which can cause them great distress. I have witnessed this in other trainings. Safety was thus an issue.

I was confident that each individual in my small sample could safely navigate through these inner worlds, and share their introspections with me. For this reason it may have been ethically questionable to use a larger and randomised sample of people that I did not know. I remain aware that the extrapolations from the transcripts must remain hypothetical, and material for further exploration. The generation of hypotheses is after all the main aim of the phenomenological approach, (Giorgi 1985). Giorgi also urges "psychological explorations must discover their own methods, procedures, rules of interpretation and so on ..." (Giorgi 1985:45).

A reasonable challenge to this work is the possibility that in training my collaborators to be aware of their internal processes, (which is one of the main approaches used in all NLP training); I could be accused of installing their internal representations rather than eliciting them. The NLP approach in training is to make people more aware of how they construct their own internal realities. It is difficult to know how many people have undergone NLP training; a conservative estimate would put it at many thousands. The only occasions where I have failed to enable people to elicit their internal representations were with severely traumatised individuals. Working with people's internal representations has a formed the basis of many therapeutic interventions in NLP, (Bandler and Grinder 1979). There are claims

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¹ The transcripts of my interviews amounted to over 35000 words. Those of the Master Practitioners came to over 27000 words.
that they have been used successfully for the treatment of phobias, anxiety and trauma, (Kozley and McLeod 1987, Einspruch et al 1988, Konefal and Duncan 1992).

There is also the question of the power and influence of the teacher turned researcher. I have explored some of these issues in chapter 10. An ever-present danger to validity could be that a student turned into a research subject may be too inclined to 'please the teacher'. In this case I was careful to separate out the two activities of assessing and interviewing. All the practitioners had been told that they had passed the course nearly two weeks before my interviews. There was a lapse of time between their assessment and the formal presentation of their certificates, and my interviews. The course itself had thus achieved some closure. This does not mean that my influence had ceased; if anything I believe it manifested itself in the amount of detail that my collaborators presented me with. Everyone who participated in my interviews was given to understand that these had nothing to do with their assessment. Punch (1998) has described the politics and ethics of qualitative research as 'a swamp' (Punch 1998:179). I was as honest as possible with my collaborators. However, in qualitative research, it is recognised that the researcher is never without influence, (McNiff et al 1996).

McNiff et al (1996) have also suggested some criteria for establishing the validity of a piece of research, though they warn that the discussions about validity in the literature are "littered with controversy" (McNiff et al 1996:67). They suggest that when a study has been carried out where the researcher has developed her own measuring instrument, the situation becomes more complex. (The patterns of language, which NLP describes, can be used as instruments for information gathering and textual analysis). For McNiff et al (1996) an important criterion is reliability. For them, measuring human characteristics with an instrument that is valid but not reliable will produce potentially different results on different
occasions. Furthermore, an instrument that is not valid can never be reliable.

Seale (1999) has suggested that it is useful to distinguish between internal and external reliability. Internal reliability is evaluated by the degree to which the models that are presented are coherent, and the extent to which the work is replicable. It also depends on the evidence procedures; the extent to which filed notes, transcripts and recordings are made available. The transcripts, which came to over 62,000 words, are indications of internal reliability. I doubt that this work is entirely replicable, though I believe that others, working in similar contexts, may happen upon the same processes that I have described.

External reliability, on the other hand, is more complex. It involves the researcher in being clear and transparent about her own theoretical perspective. She should also provide as much as possible of the original data to the reader to ensure reliability, (Seale 1999). I have attempted to do this; two complete transcripts are included as examples in the Appendices.

The illustrative texts are highly selective, having been chosen because they show aspects that I thought important. Seale (1999) points out that the interpretations of texts may produce ideological distortions. Thus interpretations can never be 'neutral' (whatever the word means) but will always be informed by the perceiver's own bias. The research questions themselves continually influenced how I looked at the transcripts; the notion of a separate, 'neutral' observer having the ability to make 'objective' judgements and reach 'true' conclusions is no longer viewed as valid in the post-positivistic tradition.

This approach is echoed by Gleick (1998), who explored the notion that it was never possible to obtain totally accurate measurements. Measurement is influenced by how something is measured. My texts
were used as a source of information, which allowed me to pursue my own curiosity about people's internal conceptual processes.

Another significant aspect of the inquiry was the order in which the questions were asked. I do not have any basis for believing that altering the order of questions would significantly and materially have altered the data. My concern in designing the interview schedule was to vary the questions as much as possible, so that similar language patterns were repeated in the next question. It is possible that during the interviews, which demanded deep introspection from participants, they may have become more practised in reporting on their introspections as the interviews progressed. In one case, ('Ina', in chapter 7) the sequencing of modal operators seemed to amplify her motivation. Perhaps this is also an area for further investigation.

So how valid is such an inquiry? Gummesson (2000) proposes that validity means that a theory, model or concept describes reality with a good 'fit', "just as a good map properly describes Earth or an architect's blueprint is useful for erecting a functional building", (Gummesson 2000:93). He suggests that validity is "seen as a continuous process that is integrated with theory and that requires the researcher to continuously assess his (sic) assumptions, revise his results, re-test his theories and models and reappraise the given limitations that have been set for the study," (Gummesson 2000:91). Seale (1999), points out that all interpretations may ultimately involve a modified form of realism; this "involves opposition to the pure constructivist view that states that there is no possibility of knowing a real world which exists separately from language," (Seale 1999:27). Bateson (1972) would add to this that the territory of 'reality' exists, that our maps are our ways of knowing it, and that we may be continuously updating our maps through feedback from interacting with the 'real' world. The hypotheses that I offer may in this sense be understood as initial attempts at mapping a terrain of experience, which is experienced by the conceiver as real.
Even with something as novel as the relationships between language, epistemology and the construction of knowledge, I have referred to a wealth of disparate literature to back up my views. I do, however, take full responsibility for the models that I propose, however fragile they may seem as initial hypotheses.

This fragility is in part due to the small sample that I used. Silverman (1993) suggests that one way of validating the generalisations that have been derived from data is by respondent validation. That means asking the respondents for feedback on one’s theorising, to establish some validity. This was not possible; some of my sample had moved to new jobs in other countries, and others who stayed in the Middle East were difficult to access electronically; emails to certain countries in the Middle East have a habit of not arriving at their destination.

Silverman (2000) also warns that there can be problems with representativeness when a small sample has been used. The solution he offers, is to validate the theories generated from a small number of cases through further inquiries using a larger population. He also suggests that in such cases, the theoretical nature of any propositions generated from small samples should be emphasised. Without further testing, my theories risk being accused of ‘anecdotalism’. Silverman describes this as a situation where researchers have used a few well-chosen examples, rather than basing their findings on critical investigation. To counter this, I referred to as much of the related literature as was feasible.

The wealth of data that I obtained, even from my limited sample, was almost overwhelming; a larger sample would perhaps have generated too much information. Silverman (2000) also suggests that one of the ways of overcoming the problem of representativeness and validity is triangulation. This was not part of the formal research protocol, as the design ‘emerged’. I had not, whilst carrying out the fieldwork in 2000, expected my initial inquiries to form the main body of the data on which to base this work. However, the Master Practitioners’ interviews
could be seen as a kind of triangulation. Certainly, they too were able to interrogate people's subjective experience, and to evoke responses in their interviewees about internal representations and sub-modalities, as well as other aspects. They also showed that the conceiver's internal representation changed according to the context of the memory of the experience they were being asked to access introspectively.

The second phase of information gathering could be criticised because some of the people my collaborators interviewed were the same as I had used. I had no control over this stage. I had already left the country when these interviews were carried out. I had initially asked all three assistants to interview every participant on the course, assigning them to specific students before I left. One of the assistants was unable to carry out the agreed interviews, leaving the other two to do the best they could in my absence. Truly, research is never a tidy, or predictable process.

Silverman (2000) also suggests that "in qualitative research, working with smaller datasets open to repeated inspection, one should not be satisfied until your generalization is able to apply to every single gobbet of relevant data" (Silverman 2000:180). Repeated inspection through interviewing was not possible with the small transient population I had at my disposal during my two month stay in the Middle East in 2000. However, the transcripts were repeatedly inspected and searched for meaningful patterns, and I believe that they were there in all of them. This was one of the reasons for going into such detail about my findings. I could have presented even more examples.

Whatever the problems of validity and reliability, I believe that as an exercise in theory generation, this inquiry has shed new light on a number of issues. Not least of these are the possible relationships between language and epistemology, which raises questions about the training of teachers about the influence of language forms on their
learners’ subjective processes. I explored some aspects of this in Chapter 12. It also adds to our understanding of cognitive processes, by drawing attention to the phenomena of internal representations and sub-modalities. There are also the roles of internal dialogue and trans-derivational searches, which again appear to be catalysed in some way by speech. Although the most hypothetical part of this work is explained in Chapter 11, I do not claim that what I have written is ‘the truth’. In Frawley’s view, “Higher thought is instrumental and involves the deferral and recasting of the external world, never its direct apprehension in its own terms” (Frawley 1997:96).

The model I have presented of the possible basic epistemological processes which are linked to language are a working hypothesis, rather than ‘true’. Silverman (2000) has pointed out that hypotheses have their uses in the generation of knowledge; they are essential to further research in order that better theories may emerge. This is the spirit in which I offer my findings. As hypotheses however, they are still novel and original. The main issue is whether they are testable.

Reliability can also be provided by the researcher exposing her emergent ideas to the scrutiny of others, (Seale 1999). Although research often feels very isolating, I engaged in many discussions with others who also used NLP as an approach to their teaching. These gave me encouraging feedback. I also gave a brief presentation of my findings to a group of professionals working as coaches and mentors, and found a receptive audience. Perhaps the acid test was in submitting chapters 11 and 12 to the scrutiny of the Headteacher who had let me observe teaching in her school. She has no knowledge of NLP or related fields. She considered that my ideas were novel, valid, and could stimulate new insights into our understanding of teaching.

This also raises the issue of the possible use of my hypothetical model to teachers. I have explored some of the existing approaches to the training of teachers in communication skills in Chapter 12. The
question of how this could translate into directions for teaching practice is a relevant one. I am aware that more research needs to be done. How do I know that my findings are of any use to teachers? I have been surprised to find that carrying out this research has changed my own teaching; I am much more conscious that I am intervening in some complex, multi-level personal processes that are influenced and directed by how I teach and the language I use. Such reflection on practice, and the consequent development of new insights, is claimed to be one of the aims of Action Research, (Gill and Johnson 1997, McNiff et al 1996).

It is difficult, without more research, to say more precisely how some of these ideas could influence the training of teachers. All I would suggest is that a few weekend workshops are not enough; that to understand the power of language in the classroom, teachers would need a grounding in many aspects of linguistics, some of which are yet still to be fully discovered.

13.4. Using NLP

One of the aims of this inquiry was to test the use of NLP in three main ways; first as a way of structuring interview schedules, using questions directly derived from Bandler and Grinder's meta-model, secondly as a distinct method of approaching textual analysis, and thirdly as another tool to use in phenomenological inquiries.

The first approach was used in my own data collection through interviews. One of Bandler and Grinder's assumptions is that information is always deleted when it is languaged. This is coupled with their view that we use internal representations as part of our cognitive mapping processes. My approach was based on these notions. I was interested in people's subjectively experienced aspects of consciousness, so my approach was to uncover as much detail of people's internal representations as was possible within the time
that it yields, then I suggest that this approach has yielded some new understandings of the processes of cognition, and therefore to learning. Exploring the roles of internal representations and the role of affective body states to learning are, I propose, some new directions for future educational research. Furthermore, little is known about the nature of internal dialogue, and its effects on learning.

The second aspect was the use of NLP as a tool for textual analysis. This was one of my main aims with my approach to the Master Practitioner’s transcribed interviews. This forms the main body of chapter 10. I demonstrated that there were a number of different thought patterns, which could be revealed by such an analysis of the text. These included the ubiquity of connections, of cause effect thinking, of nominalisations with powerful influence, and not least, of the effects of learners’ beliefs about themselves as learners. It also included the question of whether these collaborators experienced themselves as active agents or as passive recipients of their own experience of education. The factor of time emerged as a possibly significant factor in people’s conceptual maps.

The Master Practitioners’ interviews were also an evaluation of my course. Here I began to concentrate on bringing what I believed to be some basic epistemological processes to light. I began to perceive these processes as factors, which could be thought of as bringing order to chaos. They informed my subsequent approach to teaching and training. These processes could not be reduced to discrete functions, but were essentially interactive in their nature in an almost fractal way. (My explorations of these aspects formed the main body of chapter 11). This is yet another metaphor for our metaphorical toolbox. However, again I stress that my findings are in essence the results of hypothesising, and not of establishing facts.
13 5. Bias and verisimilitude; the spectres of qualitative inquiry

Many of my theoretical speculations have been directed through the ‘lenses’ of the paradigm of cybernetics, especially as developed by Gregory Bateson. As Kuhn pointed out in his seminal work (Kuhn 1970) a paradigm is never neutral, but tends to ‘skew’ perception so that one attends to what ‘fits’, which means, to what is explicable through the perceptual filters of the paradigm. Anomalies that are not explicable tend to be ignored, or dismissed through \textit{ad hoc} hypotheses. Sometimes the seductiveness of a paradigm may blind one to the appearance of anomalies, which may not even be attended to. However, it may be impossible for us to ‘know’ anything that is not, in some way, theory bound. I believe that using cybernetics sheds a different light on our understanding of our cognitive functions. Lincoln and Denzin (1998) warn that “there are as many verisimilitudes as there are genres (comedy, detective fiction, tragedy and so on), (and that this) is a reminder to the too enthusiastic researcher claiming verisimilitude”, (Lincoln and Denzin 1998:416).

Although Lincoln and Denzin warn that “verisimilitude can be described as the mask a text assumes as it convinces the reader it has conformed to the laws of its genre; in doing so it has reproduced reality in accordance with those rules,” (Lincoln and Denzin 1998:416). The Master Practitioners’ transcripts revealed that people’s ideas about their own futures were not only influenced by the language in which a proposition was couched, but also affected by the personal generalisations they had derived from their own past histories. Thus, when using NLP as a method for approaching an analysis of texts, many dimensions are brought to into view, not least among them being the power of people’s perceptions of their own futures.

NLP also offers the researcher a way of identifying the many ways in which people use the factor of time in their constructs. This was
explored in chapter 10. Again, here I only scratched the surface of a complex issue. If there is substance to the idea that language structures reveal not only the content of people’s experiences, but also the means whereby these were constructed, then this way of analysing language may potentially also enable researchers to identify what epistemological processes lie buried below the surface of a text or speech. This notion is presented as another aspect of the hypothesis, which needs to be tested by further inquiry. Paradoxically, Lincoln and Denzin’s caveat is not inconsistent with some of Bateson’s deepest held beliefs; that we can only map the territory of experience, and were thus forever caught in the ontological double bind of knowing that we know that we cannot know.

13.6. Using NLP to investigate the phenomenology of learners’ experiences

The complexity of the NLP model could make the investigation into the phenomenology of subjective experience more complex. It could also offer a more detailed map for exploring this terrain. I started by inquiring into the possible interactions between language, and the cognitive maps which were important to teaching and learning. What emerged was a model, not of maps, but of the processes we use to construct our maps. I believe an understanding of these to be basic to gaining new insights into the complex processes which are mediated through language, and which drive teaching and learning. On the way I became aware of both internal dialogue and the ubiquity of the directives in language about how the building blocks of knowledge were to be put together.

Seale (1999) warns that the issue of causal analysis in qualitative research should not be ignored, as, in his view, it so often is. My hypothesis relies on the notion that the epistemological processes that I have described in Chapter 11 have a causal function, in that they are agentive in the creation of cognitive maps. “Writers generally depend on carrying readers along with their sense of having been
close to the field, so that causal asides ... are accepted as the successful application of *verstehen*, (Seale 1999:40). He urges that a useful corrective to this tendency would be the application of Popperian falsificationism to one's favourite theories. If on the other hand the model that is proposed is clearly defined as having the status of a hypothesis, then falsification seems to be appropriate to another type or phase of research in this area. Popperians would of course approach the model with falsification in view. Mapping our mapping processes is inevitably complex and fraught with the dangers of over-simplification.

At heart this was a phenomenological inquiry, which approached the experience of subjective, sense-making processes using the tools of NLP. Within this framework, however, I can claim some validity to my constructs, as they have been carefully obtained from interviews designed to *uncover* phenomena rather than to measure or test them. My aim was to obtain what Wertz (1985) describes as data that is "as faithful and complete a description of what was lived through by the interviewee as possible". (Wertz 1985:167).

Wertz also stresses that it is necessary to identify what he calls the 'meaning units'. These are the result of the researcher's organisation of the parts they can work with. It is then up to the researchers to judge which constituents are relevant to the research. "In the case of every meaning unit, the researcher's comprehension is challenged to find relevance any way it can, and his (sic) choices are based on his specific ability to do so. The burden of proof rests on him." (Wertz 1985:167). This, in Wertz's view, is where the limits of a researcher may be revealed. However, for him, a valid way of approaching phenomenological research is to reflect on the descriptive data, pull her reflections together, and "concisely express the psychological structure of the individual case". (Wertz 1985:178).

Giorgi (1985) makes the point that both phenomenology and psychology are not mature sciences, but are still in the process of
coming into being. This reflects my own approach to my reflections on my collaborators’ introspections. Giorgi (1985), further stresses that to be phenomenological means to return to the phenomena, and to obtain an eidetic intuition of their structures. He also urges that the investigator should be rigorous and systematic, “each defined according to how the very appearance of the phenomenon invites the researcher to be methodical, systematic and rigorous.” (Giorgi 1986:26). The method, rigour and system need to be defined according to the “very appearance of the phenomenon” (Giorgi 1986:26). The extent and depth of the small number of interviews, and the use of the system of language structures proposed by Bandler and Grinder requires both rigour and a systematic approach.

Thus, this inquiry may have a phenomenological validity, yet be unacceptable to those of a positivistic inclination. Denzin and Lincoln (1998) stress that what we take to be objective knowledge and truth is the result of perspective, holding that there is no ‘real’ world independent of human mental activity and human language. When considering the notion of truth as applied to research findings, they state that they prefer the notion of ‘rightness’ to truth, dismissing the idea of certainty as “a pretentious muddle of the psychological and the pseudological”, (Denzin and Lincoln 1998:238). In their view, the idea of ‘rightness’, that is, the ability of new constructs to fit into context, is a more appropriate one. Drawing on different methods can be like using a street map of London to inquire into its geological structure. Both maps are equally valid, but are produced for radically different purposes. It is as if the range of qualitative methodologies that are available to the putative researcher can be metaphorically thought of as different protocols for the mapping of the same terrain.

Another of the aims of this research was to evaluate the use of the theoretical approach of NLP as an adjunct to phenomenological inquiry. Here I will allow the collection of my data to speak for itself. Not only has it uncovered an aspect to language, which has hitherto not received much attention, it has also indicated the existence of
internal representations and sub-modalities, and given us glimpses into their complex dynamics. This is an addition to our understanding of cognitive processes. NLP has also been useful in textual analysis. I believe that it revealed more about people's cognitive processes that lay, as it were behind the language structures of the transcripts, than had I relied on Discourse Analysis as my main methodological 'lens'. Nevertheless, NLP itself is still in its infancy, and needs the further refinements that constructive criticism can produce.

13.7. Action research, and reflections on Lincoln and Denzin's 'Fifth Movement'.

Researchers that have reached this juncture are urged to be self-critical and to reflect on their research process. "Action researchers have the social intent of improving the quality of life for themselves and others, and this is deeply value laden", (McNiff et al/1996:38). I am not sure whether the results of my inquiry would improve the quality of life of an already overworked teaching profession; however I believe that if it generates energetic discussion and even heated disagreement, then it will have fulfilled some of its purpose, even if only to make people aware that there may be a vast field of research that has been opened up for further investigation and verification. This marries well with the psychological-phenomenological approach, which McCall (1983) urges should "stand for a program to be developed, a set of recommendations to be followed", (McCall 1983:97). He goes on to suggest that these can provide a prelude to what could assume the rationale for a new and improved psychology. That is my perhaps over-ambitious hope for this work.

Lincoln and Denzin (1998) go on to challenge us with the implications of post-structuralism. Texts, in their view, have a political dimension; an author who claims some authority in the field writes them. This they refute: "The desire to produce an authoritative (valid) text is renounced, for any text can be undone in terms of its internal structural logic", (Lincoln and Denzin 1998:415). They stress that
such research should not neglect issues of power, proposing that truth is political whereas verisimilitude is textual. There were certainly power issues in the carrying out of this research, which I reviewed in chapter 10, and re-visited in section 13.3 above. There are also the further issues of the penetration of texts by power and ideological standpoints, which Lincoln and Denzin stress that the fifth movement in qualitative research must take into active consideration.

Paradoxically, I believe that what I have uncovered about language, thought and epistemology, may provide a set of more refined tools for uncovering such threads running through texts. Thus, a model of language, which assumes that there are identifiable embedded epistemological directives in texts, is surely one which could be used to reveal such facets to scrutiny? Can having a grasp of epistemology mean, in some way, that we can be more aware of how information influences people, even, perhaps unconsciously, the politically dispossessed? It could be that this research project is in some ways coherent with Lincoln and Denzin's fifth movement as part of the development of other approaches to qualitative research. It could possibly even provide it with new tools to use for textual analysis and interview design.

13.8. What has been learnt on the way.

This has been a journey, an obsession, and an exploration. It has been full of surprises, especially when information suddenly seemed to constellate itself into new patterns of insights. My unconscious was as much a part of this process as were my conscious rational reflections. Perhaps one of the biggest surprises was the discovery that the 'pilot' studies yielded so much information, and that using NLP, there was almost no end to the many levels of analysis that I could have carried out. This meant leaving out some important aspects, such as the whole field of non-verbal communication and its many influences. I have also largely ignored the NLP model of meta-programs (McWhirter 1992), which is almost a theory of personality,
and describes some overall patterns that people use when responding to information. I have perhaps been somewhat selective in the examples from the transcripts that I have used. McNiff et al (1996) stress the need to identify collaborators who are representative of what one is trying to show. The dividing line between seeking representativeness, and being biased seems to be a very fine one.

Were I to repeat this project, I would think about gathering less data on internal representations and sub-modalities, and more about the 'higher' logical levels of people's changing beliefs and values. At the time I was unaware of the wealth of information that I would also glean from the analysis of the Master Practitioners' texts. I only became conscious of this on my return to the UK, when my collaborators were no longer available for further face-to-face inquiries and follow-ups.

I have been committed to using NLP as my main approach. I recognise however that it is not necessarily a perfect tool. The model that I used is based on work done in the early 1970s. Neither Bandler nor Grinder, who were the main originators, have developed their model of language further, or deliberately invited scrutiny from the academic community. The meta-model also has its critics. Robbie (2000), who was one of Bandler's students and co-workers, has suggested that Bandler and Grinder have not kept up to date with other developments in linguistics, and that their model is therefore incomplete. McWhirter (2002, 2003), who runs his own training company specialising in NLP, has posted an extensive critique of NLP on the internet. He accuses Bandler and Grinder of neglecting other important aspects of language such as metaphor. In his view, their models of language and personal change are not precise enough. He proposes that the meta-model should only be treated as an incomplete introduction to the complexities of language. He even suggests that language has a fractal aspect. He believes that unless people are trained to a higher level of precision in NLP, practitioners
may use it without a full enough understanding of the underlying dynamics at work within language and thought.

NLP also has a culture of competitiveness and is often explicitly anti-academic. It can be too slick, used too easily to identify and exploit people's patterns of thinking, and may in some training schools encourage trainers to become manipulative in order to keep generating a cash flow. It can be used unethically, as in many trainings on selling. Cialdini (2000) has described many techniques that can be used to influence people's actions unconsciously. Despite these reservations, NLP is used extensively in training sales people, as well as in general management training, (Bandler 1996). NLP has, however, never been applied and tested in the way that I have in this study within an academic context.

I could be accused of having ignored the spiritual dimension, which is considered important by NLP trainers such as Robert Dilts (1976, 1994, 1998). There are researchers who believe that qualitative research should engage more with this aspect of being human, (Lincoln and Denzin 1998, Heron 1998). Lincoln and Denzin (1998) have suggested that the time is right for the emergence of what they term a 'fifth' movement in qualitative research. They propose that the centre of the fifth movement lies "in the humanistic commitment of the qualitative researcher to study the world always from the perspective of the interacting individual" (Lincoln and Denzin 1998:407). This is perhaps an idealistic view; is it ever possible to study something purely from another perspective, without 'polluting' such information through one's own beliefs and approaches? Perhaps NLP could be a useful adjunct to such explorations, particularly for tracking changes in how people make sense of life-changing events.

I believe the limitations of NLP are at the moment more in how it is used, rather than about its theoretical assumptions. Both have yet to be developed and tested more extensively. For me it was as if I had a different and more powerful high-resolution lens through which I
caught fleeting glimpses of some mysterious creatures, which had not yet been described.

Throughout this inquiry, I may have given the impression that I was inquiring into what I believed were the only ways of knowing. It was never my intention to provide a complete description of consciousness, only to explore the interface between language and thought. This was as the result of my personal interest rather than my metaphysics. The topic of my inquiry is distinct from the insights of the dreamer, or the ecstasy of the mystic where there has been a letting go of the ties of consciousness that bind (Epstein 1996). I have simply explored language, which is one of the most important ways we have of being human, from a phenomenological perspective within the context of teaching and learning. Let Wittgenstein have the last word! "Philosophy may in no way interfere with the actual use of language; it can only in the end describe it." (Wittgenstein, in Kenny 1994:269).
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A Bedouin Story

There was once upon a time an old Bedouin who had three sons. He was ambitious for them to become leaders of the tribe. In the village lived a wise old man, many people went to him for advice with problems such as whether they should mate their camels, plant more date palms or take another wife.

One day he sent his firstborn son to the old man, to ask him how he could become a wise leader of men. The old man received him graciously in his dusty old tent. After they had exchanged the age old Arab greetings, the old man asked:

"What brings you here to me my son?"

"Ya Mahmoud, I wish to become wise and be a leader of men."

The old man looked at him, running his hands through his grey beard. There was a silence, then he said:

"My son, you must go into the desert for thirty days, and report back to the tribe what you found."

The young man was a little surprised, but he did as the old man suggested. Early one morning he took his favourite camel, laden with food and goat skins full of water, and walked away from his father's tent into the wide, arid hot desert, not knowing what he would find.

They travelled a long time, through rough country and bright red sand dunes. The camel's plodding hoof beats were about the only sounds that the young man heard in the throat parching heat of the evenings, when they did most of their travelling (because it was cooler than during the day). When they stopped for the night, it was pleasant for the young man to drink the water the camel had carried for him, even though it tasted of goatskins. They slept under the stars, so close to each other that the young man could reach out and stroke the sleeping camel's rough fur, whereon she wouldgrunt with pleasure.

One day they arrived at a beautiful wadi, a dried riverbed, just as the sun was setting, making the sky blaze with golden light.

"Oh" said the young man, "this is beautiful. I could stay here and enjoy these feelings for ever. Then he remembered his task. "I'm sure my fellow tribesmen would love to hear about the wonderful feelings that the desert produces. That would surely be very wise."

So he spent many days writing about all the feelings that the desert produced in him, of joy, terror, interest, pleasure, excitement, and fear of the unknown.

One day he arrived back at his village, and everyone came to greet him. "What have you discovered?" they asked him, with great anticipation.

"Oh my friends, I want to share with you all the feelings I had in the desert" replied the young man. And he told them. He listed every feeling, and then far into the night noticed that the tribesmen had crept back into their tents, as they weren't very interested. And the young man went back to his father, and tended camels for the rest of his life.
One day, many months afterwards, the second son went to the wise man's dusty old tent, exchanged the age old Arab greetings, and when the old man asked him what he wanted, this young man told him that he wanted to learn to be wise enough to be a leader of his tribe.

"In that case" said the old man, pulling at his grey beard, "you must go out into the desert for thirty days, and come back and tell the tribesmen what you found." So this young man set off with his favourite camel, carrying a supply of food and water on its back. They wandered for some days, until they came to a sandy plain. As he looked at it, the young man suddenly had an idea. "What if I counted the grains of sand on this plain, and told my fellow tribesmen? Surely that would make me wise?"

So he set about counting the grains of sand. In the evenings, only the sound of his counting, and the snorting of his camel could be heard on the desert air. Before they slept, he would talk to his camel, drink her sweet milk, and tell her how many millions or trillions he had counted that day.

One day he arrived back at his village, and everyone came to greet him. "What have you discovered?" they asked him, with great anticipation.

"Oh my brothers and friends" he replied. "I have counted the grains of sand on the great red plain, and found ten thousand trillion million, one hundred and forty two thousand, six hundred and eighty three grains of sand. Is that not truly wonderful?"

But his fellow tribesmen did not share his enthusiasm. They looked disappointed, muttered amongst themselves, and then went off to one of the tents to smoke a hookah. The young man was disappointed, went home, and grew date palms for the rest of his life.

Some time later, the father of the three young men told his youngest born to go to the wise old man, and ask him how he could become a leader of the tribe. This young man would rather have stayed at home drawing pictures in the sand outside his tent, but he went, because it is written that one must obey one's father. They exchanged the age old melodious Arabic greetings, and then the old man asked him what he wanted. The young man told him that he wanted to learn to be wise enough to be a leader of his tribe.

"In that case" said the wise old man, pulling at his grey beard, "you must go out into the desert for thirty days, and come back and tell the tribesmen what you found."

So this young man took his favourite camel, laden with food and drink, and one evening their footsteps could be heard getting fainter as they went off into the vast unknown desert. They wandered about for some time, exploring wadis, and visiting the red plain, and the young man wandered and wondered at how he could learn to be wise in this unknown and hostile place. One evening he came to the crest of a hill, and saw many mountains and valleys in the distance.

"I wonder if anyone has ever seen these before?" said the young man to himself, as he looked at the landscape. But then he realised that perhaps no one could ever find their way through these strange mountains, so might never be able to describe them to his fellow tribesmen.
The distant hills looked tempting, so he decided to go there. He said to his faithful camel "my friend, we are going to strange new places" and the camel grunted. Then the young man had an idea. "I wonder if I can make a sort of image of how to get into and out of the mountains as I go along?" he asked himself, and no sooner had he thought this, that a picture came to his mind of representing the complex mountains, dried river beds and oases by scratching lines on a goatskin, which had been used to carry the precious water, and was by now very smelly.

So he wandered up and down strange wadis, over rocky hills and sometimes rested in small oases where there were sweet dates on the trees. And always he scratched the outlines of the mountains, and many other features he discovered on the goatskin, so that he could at least tell his fellow tribesmen where he had been, and how to get there again.

When the end of the thirty days came, he looked at the goatskin, and it was frankly rather a mess. "Oh dear" he said to himself. "They will think me a fool for wasting my time, bringing back such an inelegant thing as the outlines of mountains, paths, rivers and oases scratched on to this old smelly goatskin." So it was with fear and disappointment that he returned to the village on the appointed day. Everyone came to greet him. "What have you discovered?" they asked him, with great anticipation.

"Alas" he replied. "I have not brought you any great wisdom. All I have is this old goatskin with scratches on it, to tell you where I've been and what I've discovered. It is incomplete, my brothers, but hear my tale".

So they sat around the fire, which was filling the desert air with the scent of special woods burning, and he told them of his journeys, showing them where he had been by pointing at certain lines on the skin. The fellow tribesmen were fascinated, and therefore did not mind the smell of old goatskin. Soon they were all crowding round, asking "what is there? What is here?" as they pointed at the various signs he had scratched. Soon it was night, and the sky was full of stars as bright as only they can get in the desert sky. Still they asked questions, and then, when it was nearly the hour of the dawn prayer, the wise old man, who had crept into the throng without being noticed said:

"My son, you are truly wise, for you have brought back a map, so that everyone can now find their way around the desert." And they all cheered, and embraced him, before facing Mecca and praising Allah.

The young man became the leader of the tribe, and spent many more hours in the desert, making more maps, content that although they were incomplete, his people could now find their way to places of which they had never even dreamed of before.
Appendix 2.

Contained the letters of consent from all the participants.

Submitted to the Examination Board, December 2003.
Transcript of the Interview with 'Ina'. April 2000.

Interviewer: Jane Mathison.

1. OK Ina, so what I'm going to do is just read some sentences to you, and you respond in whatever way, and if you can respond with what do you do internally ... as the result of my words, that would be lovely. OK. So if I were to say to you think of a time when you were happy? what happens?

Ina: I immediately start smiling. (laughs gently)

1. Smiling, yeah. What happens before the smile?

Ina: I picture a picture of when I was happy, I picture a story in my life which brings joy and which I think of fondly comes straight into my head and I'm there.

1. You're associated. Yeah yeah.

Ina: Yeah. Associated. Warm feelings

1. ...and you're pointing to the left. Is the picture to the left?

Ina: Yeah, It's actually right in front of me there. (Points in front of her)

1. About two feet in front of you. Yes?

Ina: Yeah.

1. 3D? Colour?

Ina: 3D. Colour. Movement, I can even hear what I'm saying and what people are saying to me, I can even remember a touch, I've got, you know I've got the whole thing.

1. Lovely. Well you were really there, so I'm wondering what happens if I change the sentence slightly. To remember a time when you were happy?

Ina: (pause) .... I have many pictures now, in slides, it's silent, ... and I'm actually looking at the slides, so I'm dissociated, putting the slides down, of happy moments, but I'm outside, they're in my hand, and I'm putting them down like cards.

1. Any sounds?

Ina: No, silence.

1. Feelings? Kinaesthetic?

Ina: Warm.

1. Any difference between the kinaesthetics between those two experiences?

Ina: Yeah, this one was joy and ... I'm up, but ready to go back into that picture, this one (point to the others) is yeah, I remember that, I remember that...

1. Great. So that's question one. So now we go on to question two. How do you respond if I just ask you How are apples and oranges different?

Ina: (pause) ... a sweet apple and a bitter orange.

1. How do you know?

Ina: I taste them.

1. So the first thing that comes is the taste?

Ina: Yes.

1. Eh he

Ina: And then, colour.

1. Yeah. So when you see colour, what are you doing. Are you making a picture?

Ina: Yeah, apples, oranges.

1. Two pictures?

Ina: I've got two pictures, two scenes.

1. Where's the apple as a matter of interest?

Ina: Here.

1. To the left?

Ina: One is sweet, bitter orange.
Ina: The shape. They're both round. (laughter)
J. Yes! What's happened to the picture?
Ina: I've actually put the apple on top of the orange. (laughter)
J. Yes I can see. You were gesticulating with your hands. Yeah.
Ina: They're the same shape.
J. Are the apple and orange superimposed over one another?
Ina: Yeah.
J. OK. Wow. All right. SO question three is a bit different. Can you be aware of how you relate to someone you value?
Ina: (pause) yeah,
J. Yes.
Ina: Yeah.
J. What happened before you said the yes?
Ina: I actually thought of the person that I value. I had to picture it, and then I (laughter) I was like... if she was sitting there I would, you know... how do I ... how do I respect and value her.
J. So you actually see her?
Ina: Yeah.
J. Sitting over there in that chair?
Ina: Yeah.
J. Fine. How is that different to can you think of a relationship with a person you value?
Ina: (pause) yeah, (laughter) he's floating! Yeah.
J. Who? Someone's floating?
Ina: Yeah. I visualise there, that space, looking down at me.
J. That person's looking down at you. Life size?
Ina: Life size.
J. OK. Movement?
Ina: Yeah. The mannerisms of that person I value, I know what he does when he greets...
J. Yeah
Ina: ...or when I was nervous ... you know, times when I've needed his friendship and he's trying to make me relax, he does things ... J. So just to compare the two, when you were looking at the person you value over there, the first one, was there the same amount of movements, less movement, more movement in one or the other.
Ina: Em, she was still. I had movement in him.
J. You had movement in the second one?
Ina: Yeah.
J. So the person there was kind of moving, interacting with you?
Ina: Yeah.
J. All right. Here comes some biology. So just let me know your responses to this. In the heart the ventricles contract to pump blood around the body. The atria receive blood from the body. Closure of the valves at the bases of the main arteries prevent the back flow of blood on ventricular relaxation.
Ina: (pauses) ... I have blue and red, I have the heart actually pumping, I can see the actual movement in and the movement out, but that's probably due to my education.
J. Yes, because you're a nurse, but you're kind of pointing to your own heart.
Ina: Yes, and here's it's coming in, and going out. (points to places on her chest).
J. OK. And blue and red?
Ina: Yeah, and the heart moving. Pumping.
J. So, what happens if I were to say your heart is a pump and receives
blood from your body and pumps blood around your body. Imagine your
ventricles contracting and squeezing blood into the main arteries so they
need valves at their bases that close, so that blood isn’t sucked back when
the ventricle relaxes. (My voice was slow and a bit monotonous).

Ina: Picture of a diagram.
J. You get a picture of a diagram? (laughter)
Ina: Yeah. (laughs) I get the picture of a diagram like from when we were
studying with actual ...
J. It’s on the table is it?
Ina: Yeah, it’s on the table with actual arrows pointing in and pointing out,
the valves ... yeah, I’ve got a diagram.
J. Mh mh
Ina: I can’t see the heart pumping, it’s just a diagram, a still, and the
arrows are actually pointing in, pointing out, and the valves, like that, you
know, this is open, this is closed.
J. Yeah.

Ina: Actually I couldn’t think of it pumping!
J. The second one there’s no pumping, the first one you were pumping.
Ina: The first one was pumping, I immediately saw it.
J. It seemed to me you also felt it in your chest.
Ina: Yeah, but this one was just a diagram.
J. Outside? dissociated?
Ina: Yeah, when you were giving me the instructions I actually had the
diagram, yeah.
J. OK.
Ina: Whoo, sorry. What did you think of that?
J. I think what is so fascinating is that you just get a response, and there’s
no right or wrong responses, it’s just a response. OK. You obviously know
your heart.

Ina: (laughter) I think to make sense I had... first instructions you had
were nice, the second instructions you gave me were more textbook. The
language was unfamiliar yet it needed textbook picture, whereas the first
language was un textbook like, it was understandable to a nurse or a
layman, it was easy, the second one I needed a diagram for myself, it
reminded me of school.
J. Oops! OK. So we’re on to number five, and this is essentially running
something through a series of different modal operators, it’s something
we’ve already done. So can you think of something quite ordinary, you
know, like cleaning your teeth, something that you’re going to do in the
near future, sort of something fairly pedestrian. Now, what happens if I say
you will do it.
Ina: I agree. Can do, will do.
J. Is that an internal dialogue?
Ina: Yeah.
J. And do you have a picture of what you’re going to do?
Ina: I’m actually doing it.
J. You’re actually doing it. OK. Yeah. So you’re doing it, and you’re saying to
yourself...
Ina: You can do it.
J. So back to the picture of what it is you’re going to do, or the internal
representation of it. What happens if I say you might do it.
Ina: You’ve frozen my picture. (her bleep goes off) I’m still....
J. Do you want to answer your bleep?

Ina: Yes please. (pauses, microphone accidentally disconnected for a short time). It stopped the movement, whereas when I said ‘I will’ I was actually performing, ‘might do’ has actually frozen me.

J. So what happens if I say you can’t do it?
Ina: Exit picture.

J. You mean the picture’s gone?
Ina: No, just me, out. I was there, and now I’m looking at what I’m supposed to have done.

J. OK. And what happens if I say you should do it?
Ina: I’ve stepped back in the picture, I’m aware of my surroundings.

J. Is the picture all round you?
Ina: Yeah. I’ve stepped back into the picture and I’m looking around, and I’m basically saying to myself well have ago, see what happens, have a go, see what happens.

J. Oh! You can do it?
Ina: I’m there, I’m actually, I’m swinging, I’m doing it, I’m looking around, looking at what I’m supposed to be doing, and I’m ready. Yeah.

J. Has the picture changed in any ways?
Ina: Yeah, there’s movement, there’s sound, I’m looking at everything around me, and I’m saying to myself ‘some on then girl, keep going’.

J. And is it more so than in you should do it?
Ina: Yeah, in should, it was silent, in ‘I can’ there’s sound I can hear what’s going on around me. I think I should is more private, I’m like ‘I’m going to give it a go’!

J. Yeah. So with the ‘should’ you’ve got an internal dialogue, and the outside is silent?
Ina: Is silent.

J. And what happens if I say ‘you could do it’?
Ina: Yeah, it re-enforces my ‘I can’. It’s just given me, … go ahead… more. I have support by somebody saying I could. ‘Go on, you could do it, you could do it’. I’m actually, yeah, my coaches ...

J. So you’re touching your left shoulder. Is that as if somebody’s kind of encouraging you?
Ina: Yeah yeah.

J. So, picture?
Ina: Yeah. Yeah, ‘I could’ is me actually going out to the dug out (indistinct), and I’m getting a ‘could’ and ‘I can’ I’m actually at the batting, right there, on my own, but still aware, but ‘I could’ is like I have somebody on my back.

J. Encouraging you! OK. this is content free but I’m quite interested to know what it was. Is it a sport or something?
Ina: Yes it was, it was my, … soft ball

J. Oh, OK.
Ina: You sort of like freeze when you get to the batting mount, so it depends who sends you out. If they say ‘you will do it, you could do it or you can do it …’. Brings back memories.

J. So modal operators might actually be quite...
Ina: Helps me play better...

J. … powerful in terms of your performance.
Ina: That’s what I say when I’m getting ready to hit. ‘I will, I will I will’. With the ‘I could’ is just an extra support for me. Somebody actually has faith in me to say, go on, you can do it!

J. Just as a matter of interest, as I went through these modal operators, was there anything like stacking an anchor going on?

Ina: yeah, I can, and I will, and you could … it’s just that I’m out here …
J. Did they all sort of influence each other?

Ina: With the 'I will' then you’ve told me, and I will do it, so I’ve already future done it, I will do it, and I can has put me there, ‘I can do it’, I’m there. And ‘could’ somebody’s just reinforcing me, bringing me forward.

J. So with the ... it seems to me, and again I’m not sure, I’m really just suggesting something, trying not to mind read, ... it seems to me that you’ve developed like an ... attraction?

Ina: ... yeah, a pull, the further down we’ve gone the more the pull has developed. I feel safe, I feel great, I fell like somebody actually believes that I can do it.

J. OK

Ina: Somebody values me as a player!!!

J. Yes, that’s always important.

Ina: Oh God here she comes, it’s like, ‘oh great, we’ve got a chance there to get some home runs.’

J. Yeah. OK. Well we could talk about that for a long time but we’re on to question six. Think about something you have to do but you’re not sure you particularly want to do?

Ina: Yeah. I have to (indistinct) ... what a repulsion! I have to .... Bound by duty.

J. So what was the first response? Was it a K?

Ina: Yeah.

J. Because it seemed to me, and again I might be mind reading, so just let me check this out with you. It seemed to me that you were running something through... saying something to yourself. Maybe you were just running my words through again.

Ina: No, I actually visualised it, what I’m supposed to be doing, and what I have to do.

J. OK OK.

Ina: It’s like. I had it back there, it’s like Oh God, I’ve still got to do that!

J. Picture in front?

Ina: Picture in front, yeah. You’ve just made me bring it forward. I did have it back there. (Points to where she ‘sees’ the image).

J. You had it behind you first?

Ina: I had it behind, and I was, you know, repeating the question, I had to bring it forward, yeah, I have to do it.

J. So now imagine that you were in the future having done it?

Ina: Well I would hope that I’ve done it would be a good outcome. I won’t know until I did it because I can get two reactions to it, I do it, depending on the outcome it might be a good one or a bad one, depending on the person involved.

J. OK

Ina: My intentions would have been ABC... somebody else’s may have been CDE.

J. So what’s happened now that I’ve asked you to step into the future and imagine you’ve done it, what are you doing on the inside in response to that question?

Ina: Well if I do it this way, will she be pleased, but if I do it that was... to please me, will she be pleased. I know what I have to do but what I want to do, I’m going to get two different...

J. Do you have two pictures?

Ina: Yeah

J. Where are they?

Ina: Out in front.

J. Which one’s on the left?
Appendix 3. Interviewee: 'Ina'. Interviewer: Jane Mathison.

Ina: The one I have to do. The one I want to do is.... (points in another direction).
1. Let's assume that it's successful and you're in the future looking back on it...
Ina: Yeah,
1. Where's the picture now?
Ina: In front of me. I know I could lead to this way but I just don't want to think about that though...
1. So there's another one down by the left that you're not looking at?
Ina: 'Cos I haven't done it but I would like the one...
1. I'm sure you'll find the necessary resources to have a good outcome. OK. So, on with the interrogation...
Ina: ...just down on the floor.
1. Can you remember a mildly unpleasant experience, ... mildly ....
Ina: OK.
Ina: Disappointment really.
1. Right, so it's a strong K?

Ina: Yeah, I've seen it.
1. You've seen it, but is it down on your... It's down on the floor? OK. What happens if I say how do you feel about it?
Ina: I got angry.
1. So...
Ina: Disappointed the way it turned out, but I'm also angry because it went the way it did. It shouldn't have done that.
1. OK. So has... and again don't let me put words into your mouth, ... asking how you feel about it (bleep goes off) Has the asking 'how you feel about' it in any way amplified your kinaesthetic response?
Ina: Yeah,
1. 'Cos you didn't mention anger the first time
Ina: I was just seeing the picture and I'm listening to what was going on and I'm seeing both person's involved, and I knew those persons, that's why disappointment came first, then the anger.
1. Was there anger after I said 'how do you feel about it'?
Ina: yeah.
1. OK. Do you want to answer your bleep?
Ina: Yes please. (pause)
1. On to question number eight. What if I were to say to you: you are good at NLP but you need to work on your rapport skills.
Ina: I'm thinking, ooh, what have I demonstrated... you've given me.... I'm questioning your ability...
1. You're questioning your abilities. OK.
Ina: The next question would be 'how can I improve it'?
1. So it's like you're paying more attention to the second part of the sentence than the first.
Ina: Yeah. I like the first bit. The second bit I need to work on.
1. OK, so if I were to say you need to work on your rapport skills but you are good at NLP?
Ina: OK.
1. Does that change anything?
Ina: Actually, I don't have the (indistinct) that I had with the first one.
1. OK. So the first one was more powerful?
Ina: Yeah. You made it sound like my rapport skills were acceptable, but I could get better, but you didn't ... there was like no force or anything, there was no focus on it,
1. OK
Appendix 3. Interviewee: 'Ina'. Interviewer: Jane Mathison.

Ina: ...because you but the 'but' in, and you said I was good at NLP, OK, I’m going to take the second value.

1. You ended it good? OK. So ending it good has a different effect on you than ending it bad?
Ina: With ‘bad’ I automatically start thinking ‘how can I make it better’.

1. OK so if I were to say to you think about your rapport skills so that you can be even better at NLP?
Ina: That’s great, I’m happy, you’re not questioning my ability, I’ll just take it into account.

1. So is it an internal dialogue, or are you seeing pictures, or is it just a kinaesthetic response or any one or all three?
Ina: Pictures and kinaesthetic. Pictures of what I was like in class, and the feeling I was getting from the group. Yeah. Nice.

1. Yeah. OK. the next one, we’re on number nine now, is think of something you might have done better. Again, pick something that isn’t a biggie.
Ina: OK.

1. And just see what happens if I give you feedback in two different ways. If I say you did that wrong or you did that wrongly, is there a difference?
Ina: You did that wrongly makes me ... fiddle about?...(indistinct) you did it wrongly gives me room to make it better. Wrongly notices some things that I’ve done wrongly so I can make that better, but with wrong I’m going to have to start all over again, I must have done a big boo boo.

1. So with the ‘wrong’ is there a picture? I mean, you’re going like this with your hands.
Ina: Yeah

1. Yeah, and wrongly?
Ina: Wrongly, I have a picture, and I have ... I’m actually ... I’m aware of what I’m doing and I’m just thinking, everyone’s looking and I’m actually going to think about this. So I’m actually having an internal dialogue, and it’s like they’re frozen, but I’m actually having a dialogue saying to myself ‘OK, Ina, how are you going to do this? remember your points, look at your lesson plan’, so they’re frozen, yeah, and I’m .... I’m making improvement and I’m actually checking ....

1. It wouldn’t be a series of slides ... ?
Ina: No no, my lesson plan...

1. OK. You’ve got your lesson plan actually in front of you. Like a stack?

Ina: Sort of at waist level.

1. Yeah. OK. Thank you! (laughter) OK we’re on to question ten so we’re half way through. What happens if I say remember your childhood?
Ina: (Long pause). It was hard.

1. It was hard. Picture?
Ina: Just the word childhood, and I’m getting flash backs of things I had to do and things I had to put up with.

1. Right, flashbacks in terms of....
Ina: Way back there!

1. Way back there, but they seemed to be in front of you at one point.
Ina: Oh yeah yeah. Oh no I can handle it.

1. Sure sure sure.
Ina: Questions come up, why this, why that? What if? (she shows signs of distress).

1. OK. Internal dialogue. So let’s go through the next one very quickly. Just give me a... just dip in and out, remember being a child? (pause) Just dip in and out.
Ina: Yeah. No, I remember, I can see me as a child, but I’m remembering with this head.

1. Yeah
Ina: If you know what I mean...
1. I know what you mean.
Ina: I can see myself as a child, with a child’s body. I can see ... the girl, as the girl, who was nine and had the head of a seventeen or eighteen year old, kind of...
1. OK, so you’re looking at her at nine, there in front of you?
Ina: She wasn’t thinking as nine, she was thinking of ... you know, ten years her ago. OK. so let’s move quickly on to the next one. this is just exploration. Is it any different if I say remember your self as a child?
Ina: (pause) I was lonely.
1. So is that a K?
H. I had brothers and sisters and stuff but I felt lonely.
1. OK. That’s fine. And pictures, sounds...?
Ina: Oh yeah, I can hear the family going on...
1. Can’t we all. Yeah!
Ina: They never seem to go silent.
1. Oh dear!

Ina: But yeah, they’re going on having (indistinct) but being a child, I was carrying I was ten years, and I was ... (indistinct)....
1. OK, so it’s obviously a biggie, and you know, it takes a lot of shit to produce the best roses. (laughter from both people.)
Ina: But when you think your parents are there to develop the roses and it turns out that you have to do the developing of the roses, that’s when it’s hard. It’s like, hold on a minute, I’m still nine, still ten.
1. OK. Those questions evoked quite a lot of stuff. I mean, I appreciate you sharing that, and you can zoom it out, so question eleven, think of something you do really well. And there’s lots of things you do really well.
Ina: Yeah.
1. OK? What’s your response?
Ina: (laughs) it’s like I’m having an internal dialogue saying yeah, you really do that really well, and you know you do it well so go forth, so it’s like I’m giving myself the old pat on the shoulder, and going you know...
1. Picture?
Ina: Yeah.
1. Picture before internal dialogue or after?
Ina: No, I’ve actually said it to myself, as I’m saying it as well, the picture’s coming up. It’s everywhere
1. Sort of all round? What happens if I say to you now as you’re looking at it how could you make it even better?
Ina: (long pause) this is going to sound really weird, but it’s like I need to have my mum in the picture and say ‘look what I can do!’
1. OK.
Ina: Look look look, take it in. That sound weird, doesn’t it.
1. No!
Ina: Anything I do, anything good, I’m proud of this, it’s like you said look what I can do!
1. ... and you’re pointing to a series of pictures in front of you from left to right?
Ina: yeah, look.
1. And again, if I said to you what are you not paying attention to, what happens?
Ina: In my picture?
1. Wherever.
Ina: I can still see the good stuff, looking at it, enjoying it.
1. Yeah. Could you be looking at it differently at all?
Ina: Oh no.

Jane: Great. The next one is a fairly simple one. So, imagine something you might do.

Ina: OK.

Jane: And what happens, what’s the difference between me saying you can’t do that and you can’t do that yet?

Ina: What do you mean you can’t? I put up my defences. I can do it.

Jane: Internal dialogue? OK. And ‘you can’t do that yet?’ What sort of response? Do you just go ‘OK’?

Ina: OK for now, but why? (Laughter) OK, I’ll take that in but why? Just explain. The ‘I can’t’ is ... I get defensive. And ‘I can’t yet’, OK I’ll accept it for now, but I’m going to do it, for now, unless you tell me otherwise.

Jane: OK. Next one’s a little bit longer. Think of a goal you have in your life.

Ina: OK.

Jane: And you’ve got the VAK¹, the lot? OK. What happens if I ask you what do you need to achieve it?

Ina: What do I need? I’m making a list. I’ve made a list of all the things I need.

Jane: And what happens if I ask you how will you achieve it?

Ina: I don’t know until I start activating my list (laughter) I need a trip to go home to England first, the process starts then.

Jane: And if I ask you why will you achieve it? What happens to your internal response?

Ina: Because I want to achieve it. There’s a need. I have to.

Jane: You touched your chest right then. Is that like a K?

Ina: I have to.

Jane: So it’s something important to you. And if I now say what will it be like to have achieved that now?

Ina: It would be excellent. I would be working on my degree.

Jane: I don’t think you’ll have any problems there.

Ina: Thank you. I’ll be very proud. I’ll be happy.

Jane: So now if I ask you to think of the goal again, has anything changed from the first representation, between the first representation and the last one?

Ina: You know the question of how will you do it? I’ve actually visualised how I’m going to do it before activating my list.

Jane: OK.

Ina: I’ve actually ... doing my degree, and ... I’ve done something because I’m doing it, because I know the ‘how’ so I’m actually seeing myself doing it.

Jane: OK.

Ina: I’ve done it!

Jane: So when you think of the goal again, has that changed?

Ina: Yeah, it’s like I’m on my way to achieve it.

Jane: Movement? Attraction?

Ina: Yeah, whereas the ‘how’ stopped me, because I was like.... I’ve got this list, how am I going to do it, That’s what I said, I hadn’t activated my list yet. But saying that I’ve achieved it, and how do I feel, it feels the how has already been done, because I’ve done it, and I’ve succeeded, very happy.

Jane: Congratulations. OK. Next question. What happens if I say you must not imagine a blue camel?

Ina: (long pause) I’m sitting here thinking of a blue camel.

Jane: And if I say don’t make that mistake again!

Ina: The blue camel? Or just the words?

¹ This is an abbreviation for visual, auditory, kinaesthetic.
1. Anything.
Ina: It doesn't feel too good.
1. You maybe think of a mistake?
Ina: Yeah.
1. I said don't...
Ina: ...just thinks of the things you've done, cringing, good cringe, just 'don't do it again'.
1. Picture, sounds?
Ina: Internal dialogue again. 'Oh Ina, I don't believe you did that'!
1. So if I said *Enjoy your holiday and your time off*?
Ina: That's good, that's cool.
1. A good K?
Ina: A good K, yes
1. Pictures?
Ina: Airport? Family, holiday.
1. So you see...?
Ina: The rain, the wind, looking forward to it.
1. Yes. Slides or film, movie, colour, black and white?
Ina: I'd say slides, it has to be still, because the family will be there. We'll do this, we'll do that, so I'm probably thinking of our last holiday, we'll be doing this, going to Grand Ma's, going to in laws.
1. It looks to me as if they're all on the table as you're pointing.
Ina: Yeah.
1. The next one might sound a bit silly, just interested to know if there's any different kind of response if I were to say to you *Enjoy your trip and have a good break*?
Ina: You've shortened my holiday!
1. Oh, sorry!
Ina: It's not a trip, it's a holiday. I like the word holiday.
1. You don't like the word trip?
Ina: Trip I consider is a weekend away which I do to Jeddah.
1. Yeah.
Ina: But a holiday ... you don't get a trip to England, you get a holiday to England.
1. OK. It's a nice complex equivalence. *(laughter)*
Ina: Yeah, trip equals Jeddah.
1. Right. We're on to number sixteen. *Think about how much you've learnt*?
Ina: What, everything?
1. Anything you want.
Ina: Wow.
1. What produced the wow?
Ina: The 'God you really did that, well done:' *(interruption)*
1. OK, so *think about how much you've learnt*?
Ina: I've learnt a lot. I've still got a lot to learn. You've got this, this, this, and you've still got this ... still haven't learnt this, so I've learnt this, but I still have...
1. So, you seem to have an internal representation of something you've learnt, and that's close to your chest, and you seem to have a circle beyond that of things you're still...
Ina: ...which I have to learn.
1. You have to learn. Right.
Ina: I can see myself up there.
1. Are you paying more attention to what you haven't yet learnt by any chance?
Ina: I'm forever making notes, so if I hear something, or I hear of a practice, or a skill, or just things people say, or I've attended these various symposiums or seminars, I put it down, 'oh may be that will come in handy for the hospital, or maybe that will come in handy towards so and so. I'll look that up. In my job I can do that, whereas the other girls can't.

J. OK. So internal representation of what you've learnt close to your chest, the rest out there, and then you go in to seeing yourself writing things down.

Ina: Yes.

J. So what happens if I say Are you aware of how much you've learnt?

Ina: (pause) I know what I know. ... but I've still got to learn more. I don't know everything. It's that word 'aware'. I still have yet to learn.

J. It seemed to me that you were searching much more.

Ina: I can't put down how much I know, how much I've learnt, it's just I can't... I can't I've learnt this, tick, I've learnt that, tick. I know what I know. There's still other things I have to learn. So I'm probably more aware of what I might need to know, than to what I already know.

J. You see the interesting thing is your gestures are completely different, because what you know is now further in front of you, and then what you don't know is up, up there.

(End of first side of tape. Turn over.)

J. Lovely. OK. SO, if I say it's a nice day, the sun is shining, we could all go to the desert?

(Laughter)

Ina: I don't think we should be going to the desert in this heat. It's all sweaty. It's not a good idea.

J. Did you make pictures?

Ina: I made a picture, yeah

J. And then you ... what happened

Ina: I associated.

J. Yes. And you felt the heat?

Ina: I felt the heat, and the uncomfortable sweat and the...

J. OK. And is that any different to, it's a nice day and the sun is shining so we could all go to the desert?

Ina: We could all go? ... Still nothing, no change. Not even a picture. Just don't go to the desert in May!

J. It's only April!

Ina: April, beg your pardon. (laughter)

J. Change of subject a little bit. It's important to understand communication.

Ina: (pause) I'm agreeing with you.

J. How are you representing it though?

Ina: I'm seeing things at work.

J. In front of you?

Ina: Yes. (pause) I am listening to what everyone is saying, and I'm saying to myself that it's important, that's why we have to be aware of it.

J. OK. And is that in any way different to it's important to understand communicating?

Ina: (Pause) understand communicating. I'm communicating. I'm visualising... I'm doing the communicating.

J. So in the other one, there was general communication going on?

Ina: Communication. And I'm going 'that's why it's important' and to understand communicating, what I'm actually doing the communicating, and I see the responses of the people.

J. Is there more movement?

Ina: Yeah, more movement.
J. More sounds?

Ina: Only for me though. Only for me, yeah, just me, doing the...

J. Brilliant. Thank you very much indeed. Thank you so much.
Transcript of ‘Edward’ interviewing ‘Steve’, 8th May 2000

Edward: Is there anything you wanted from the NLP course before you actually started it?
Steve: Just information really about accelerated learning techniques and how NLP was different or similar to hypnosis.
Edward: Right. You looked into NLP before?
Steve: Yea yeah.
Edward: And so did you have any expectations of the NLP course ...
Steve: Emm, the course itself, really, no.
Edward: What were the goals you had coming to the NLP course?
Steve: Oh, ... main goal was to satisfy my curiosity, and anything after that was a plus really to be honest.
Edward: How did you think you could use these goals if you achieve them?
Steve: ... interesting question. I suppose... I suppose I didn’t have any preconceptions about using them after, I hadn’t, I didn’t perceive myself using the skills after the course, it was mainly out of curiosity that I undertook the course , but the reality was different.
Edward: OK. With the skills that you now learned, and the different things you’ve become aware of, do you think there’s anything that you can now achieve that you didn’t think you could achieve before?
Steve: Thousands of things!
Edward: Really.
Steve: Yeah, thousands of things, from very very small things to considerably bigger things.
Edward: How is it that you think the NLP will help you achieve all these different things?
Steve: I have been successful in most endeavours that I have undertaken, I haven’t ... I suppose I really haven’t had a conscious strategy for achieving outcomes of different kinds in many areas of my life, I suppose I believed that I was a failure, or that I had failed, certainly, and I think NLP has given me the ability to see things from a different, a different perspective, many different perspectives, really. I suppose.
Edward: OK Saying that you perceived in the past that you failed to achieve the things you wanted to do, using the NLP you’ve learnt, do you think the things you tried to do were failures?
Steve: No, no, I look at them a lot differently now, and I see them in a lot... in a lot better light, if you like, it’s hard to describe them, but better actually, sub-modality wise you could say in a much brighter light. And I think that ... yeah well I suppose that’s it really,. they’re.. they definitely don’t seem to have the same impact in my present life as they did have before the course.
Edward: OK. Are you able to look back at these events and break them down into the useful part, the part that really have no value, and the part that may have some value but you’re not aware of yet.
Steve: I think mainly the parts that were not of any use to me, and in those situations I wouldn’t use those again, really. You know, I wouldn’t go so far as to make the same mistake twice if you like.
Edward: OK So maybe NLP helped you to learn from what you thought was a failure, and actually wasn’t necessarily a failure, was just a way of doing something?
Steve: Yeah, absolutely. That’s a fair analysis.
Edward: I guess leading on from that, is there anything you would now do differently as the result of having learnt NLP.
Steve: Yeah. There are a few things. One that comes to mind I suppose, I’ve changed my outlook on what I’m able to do and what I’m not able to do. I’m far more confident in my abilities in the future, I suppose if I were
to say that ... I’m not using NLP on other people if you like, or at least not consciously. Mainly I’m using it on my own processes.
Edward: OK. DO you not think that may be this affects the way you are with other people then?
Steve: With some people, yeah, with some people. In certain situations, yeah,
Edward: OK, so maybe what you’re telling me is that at certain times you’re aware of using the processes of NLP in order to sort through the things you’re doing and thinking about?
Steve: Mainly what I’m thinking about, mainly what I’m thinking about, in other words I suppose I’ve used, or I use NLP all the time at work, but mainly internally, and I suppose I do believe that externally I have changed a little bit anyway, you know, for the better.
Edward: How is it that you’re using NLP internally?
Steve: I suppose by using the different techniques to ... there again, view situations from different perspectives and trying to find out how somebody else would do the same thing, so sort of modelling really, on a smaller scale. ... I suppose I’ve become more aware of other people’s anchors as well, for triggering off responses to me, and I’ve learnt either to avoid the anchors or to use them for my own benefit really.
Edward: OK. You mentioned modelling. Do you find that you are breaking down processes?
Steve: Yeah yeah. Yeah yeah ...
Edward: So you’re becoming more aware maybe of the individual bits that lead to an outcome?
Steve: Absolutely, absolutely, and not only in my own in my own, in what I’m doing myself, but in what I see other people doing as well. ... I would be more conscious of my ability to solve problems now as well, whereas that was taken for granted in the past, in so far as I never thought about solving problems, it just... the problem had a solution, but now I think problems have many solutions you know, and I don’t see them as problems as such.
Edward: OK, well that’s good. What I would have to say then here is, because we’re all very happy to say NLP is very good, it’s very helpful for people, do you actually find that it is helpful?
Steve: Absolutely, absolutely.
Edward: In what way?
Steve: It’s helped me to become more consciously aware of my thoughts, of what I think, even though generally I’m quite an internal person anyway, in so far as I tend to have a lot of internal dialogue, and I think that from the NLP point of view it’s helped me to place thoughts and Ideas in different... I suppose to sequence them, to put them in the best order I find possible, to help me to achieve just from small things to, from small things in the present like work, like everything really, doing much bigger things in the future, that I’m planning on doing.
Edward: OK. Do you do this by running and re-running the internal dialogue, or do you just do it once and say ‘that’s how it’s going to be’?
Steve: Running and rerunning but not too often, you know, I wouldn’t run the loop over and over again, just a few times, and each time I would try to see or hear... I would try to become aware of what might be different each time that I do run the internal dialogue.
Edward: So in rerunning the dialogue a few times, do you have pictures with it?
Steve: Yeah, yeah ...
Edward: And are they clear pictures or do they change?
Steve: They change, they change as the dialogue changes. They change, or they might change... they would have the same theme but in detail it would
Edward: And do you find yourself looking in on these pictures or being part of the picture?
Steve: If it's future I tend to be looking in at the picture, something that's future events, but seeing myself in the picture, for present things, I generally, if it's something that's quite close by, I tend, generally, tend to be doing it internally if you like.
Edward: Just a little extra, do you ever step into your future pictures?
Steve: Often yeah.
Edward: So you like to try them out? And you find that useful?
Steve: I find that very pleasant, mostly, it is useful, well, it would be wrong of me to say it's useful until I've actually attempted to do what I'm doing in real life, in real life, you know at the present time if you like or at the future present time. I won't know fully if it's useful until I've tried it out, but it certainly is useful in so far as it makes me feel like, like going forward, it's a motivator, it's a motivator.
Edward: OK. Could we say it gives you confidence?
Steve: It, yeah, it gives me confidence even though I generally have quite a lot of confidence but this gives me a different type of confidence, you know, I would view confidence as being able to communicate with people, as being ... having knowledge and being able to use that knowledge, but it's the confidence that I get from stepping into pictures of future events a sense of excitement and apprehension and things like that, It's more or a rush than a sense of confidence I suppose really, almost like a surge of adrenaline if you will.
Edward: Right, so you get feelings with this then. Before you did the NLP were you aware of all these different feelings you had when you thought about future events.
Steve: Yeah, I would have been, it would depend, at certain times I would have been, I do a lot of meditation so when I'm meditating I would be very mindful of my thoughts and where they are, and the thing about meditation is as I've explained is that I spend most of my time trying to forget about them. (laugh) or trying to calm them down or trying to ignore them, if you like you know, but I would have been aware of before, but I wouldn't have known why I was aware, if you know what I mean, I wouldn't have understood the process, the process of it.
Edward: It's interesting because NLP allows you to actually look at these thoughts and be aware of them and see the process that goes on. Do you find now that you can meditate perhaps better than before?
Steve: I certainly have become more, I suppose I've meditated for about ten years on and off, I can't say every day, but I do try every day, but I suppose I would feel more comfortable in the practice now than I did before. I tend to forget about the aches and pains and sort of... the thoughts don't bother me as much. My mind seems calmer anyway. When I'm meditating which is a very calm time for me ...
Appendix 4. Master Practitioner Transcript of interview between ‘Edward’ and ‘Steve’. 443

difficult then... or that I'm beginning to, I'm finding it a lot easier to change my states really, either like emotionally or physiologically, I'm just finding it a lot easier to switch between the two.

Edward: So do you maybe find that NLP joins together with all these other things that you've done in the past, you meditate ... ?

Steve: I think so yes.

Edward: Rather than it standing on its own.

Steve: No, no it's very much integrated really, and as I was telling Jane in her last interview, she was asking me about ... actually she wasn't asking me, I was telling her how I was organising my NLP and it seems that everything internally that I'm organising has been based on how I organise the NLP because I found that so useful and good for easy accessing ... and I think that I've integrated an awful lot internally, you know, and these things are all becoming, everything's becoming linked, but it's not around NLP, it's just around ... I mean ... it's just another number on the clock face really.

Edward: That's a nice metaphor, yes. It's amazing how many we use. OK.

Let's just move back to the course itself. You've obviously done many different types of courses to get where you are today. Did you find this course in any way different to courses you've done before?

Steve: Yeah, I found it a lot more enjoyable because I think it was a lot more stimulating... in many different ways. I must say I found the day I did with Graham Betts-Symonds, it was fantastic because it was such a holistic approach to learning, to understanding, and I think that the NLP course had great similarities, I love doing group work, I love doing practising new skills, and I love being able to practice them there and then rather than having to wait like if I was doing ... you know, if I was studying nursing, you learn about injections before you get to give them and it's just so different, it's just so different, I wouldn't have had the same enthusiasm for other courses that I have had for the NLP because of, because of it's nature really.

Edward: Graham Betts Symonds's course... you went on the afternoon session, was very much, in the way we did it, to do with chaos and different types of learning and whether you learn in it, so this obviously, you brought this with you Into the NLP course. The way the NLP course is set up Is quite different in as much as it does have a structure that is probably you were of that there was a structure there rather than what we did with GBS, but looking at the way the NLP course, was there anything specifically that you see in it that was different from what you're used to in the past that you found was more useful compared with ways you've learned in the past.

Steve: (Pauses).... In comparison with certain things I mean, yeah. I tend to learn very very well if it's a practical theoretical mixture conducted as I say, at that time, I suppose in comparison to say when I was a school when it was all theoretical, and I went to a school which was very academic so we didn't have science pracs or any of that, we had books and that was it, and we had Latin and we had history and crap like that but the... I think the way that Jane taught the course was very stimulating, was very.... It was at times very very draining, emotionally and psychologically draining because of all the Ericksonian type magic she was using, she was weaving around the place, em, at times I felt that I wasn't learning anything, but I was surprised that when I went home, that I’d look over the book, I’d look over the manual and kind of go oop, there it is, I know that! So I must say that while I wouldn't have been aware of how much I was learning, I learnt a lot, an awful lot more than the things I've done in the past you know that I would have learnt. And I mean it seemed effortless, effortless. (laughter)

Edward: That's one of those phonological ambiguities. So If you look at the way you learnt from before the kind of way you used to learning, we all remember sitting in the classrooms studying, you've got to pass exams, and
taking that and how you applied yourself in order to learn in that situation.

Do you think the way in which you can now learn has changed?

Steve: Absolutely. Yes. I believe that now I don't have... I suppose before I
had a fear of sitting down, studying and stuff like this because I felt that
maybe it was a waste of time when I could have used that time to do
something practical, and I would have been afraid that the outcome
wouldn't have been as desirable as I want it, that fear has gone, and now I
believe that within certain limits that I can learn just about everything ...
anything really, well maybe I couldn't learn anything, everything, but I'd be
willing to give it a go, and I think that I would use as much of a model of
NLP or how Jane managed to teach us, I would apply that to any new
methods of learning or parts of it. It might not all be useful, but certain
parts of it I would use.

Edward: OK. And do you see a use for these new skills when you are
teaching people?

Steve: Yes I do.

Edward: in what way?

Steve: Well I must, I agree with the statement that not everybody learns on
one representational system, and that's a thing I would not have been
aware of before. So now I would integrate that if I was teaching people
something, as well as using things like metaphors and past experience of
my own and of other peoples, I think they are very very benefiCial for
different people. If I was confident enough to assess how best another
person might learn.

Edward: You said earlier that you would have limits to perhaps either how
you learn or what you would be able to learn. What do you mean by limits?

Steve: I think (laughs) may be I don't! I suppose, I mean I do believe that
there are certain things that I will not be able to learn, I don't believe I'll be
able to learn, emm how to build a nuclear reactor. Nuclear physics was
never my thing. I mean I'm aware of nuclear physics but I don't believe I'll
ever become competent in learning them, I don't know why that is, I've
never tried to learn nuclear physics but I mean it's just a belief that I have,
you know (laughs) a belief that I need to address! Sorry Jane!

Edward: Well that's an interesting thing, because nuclear physics is an
interesting point to bring up as something that you perceive as being out of
your reach anyway, or for where you see yourself going.

Steve: As well as that I suppose it's not just out of my reach, it's something
I don't really desire to do, or desire to learn.

Edward: So what I would say here is it that you're putting a belief on to
something because its not within your environment as something that you
desire, or is it really setting to you that you believe 'well I couldn't do that
so I wouldn't do that'.

Steve: No I suppose it's about the environment, it really is... I suppose if I
put my mind to it I could, I could, yeah I could ... I hope there are jobs in
Thorpe when I go back, I hope Thorpe's still there. Yeah, there are limits
when I haven't discovered, when I haven't discovered .... No, what I'm
trying to say is I believe I've got limits until I've tried something I don't
know if I've got limits, if I'm limited or not.

Edward: OK

Steve: It's something that I'm future pacing or, but on beliefs I suppose,
I'm not a strong believer in the fact that I have limits like, but it is a
limiting belief.

Edward: how do you set those limits?

Steve: Lack of knowledge I think is one thing, lack of practice ... I suppose
other people's beliefs about my capabilities would have been an influencing
factor, like if a teacher at school ... a very common example, if a teacher at
school told me that I was doing ' maths, meaning the ordinary level and not
honours, I would consider myself not capable of doing ... I would have
considered myself not capable of doing honours maths. Now I'm twenty
eight I look back on the honours maths course and I can do it in my head, I
can't believe that I ... I just can't believe it, you know, because I had a
limiting belief that was set by somebody else actually, you know.
Edward: OK so you're able now with your NLP to see that it's not your
limiting belief, it was somebody else's imposed on you.
Steve: Very much so yea, in many, in many many areas.
Edward: It's interesting that society gives us boundaries that so many
people maintain, they never step outside the boundaries that have been set
by other people, and NLP gives us a way to see round these boundaries and
then break them. OK. If we just move on a little bit more. It's interesting
because we've just touched on beliefs and what I'd like to know now is have
any of your beliefs changed.
Steve: Yes, some have, some have. We've discussed one there. I suppose...
many many have ... what am I trying to say here... yeah many have but
not to a great extent you know, They may have. Maybe one or two beliefs
have changed. One or two have sort of wavered. I wouldn't say there have
been too many changes but there have been some.
Edward: I mean you're aware that the course was not designed to change
your beliefs or change your ideas, this is some would say a benefit, some
would say a flaw of NLP. What it does is it allows you to look at your beliefs
when you feel comfortable with them and see if you can change those
beliefs. Now what I would ask Are those beliefs that have changed that you
are aware of, how have they changed?
Steve: I suppose ... it's in sub-modalities that they've changed. I see
pictures and have feelings about things that have changed from how I did
before, how I viewed them and felt about them before. But the changes in
beliefs have been generative really. They haven't... like they have been
positive as well. They've generated new beliefs, I suppose that's probably
more than changing, they have generated new beliefs, or NLP has
generated new beliefs for me and it's been linked with old beliefs, to be
honest I'm not a hundred percent sure which way it is. Excuse me ... the ...
I think that's the main one that's change. I think it's the main one.
Edward: So what kind of directions it's moved you in?
Steve: Its sort of ... sort of fanned me out in a forward direction if you like,
it's more a sixty degree angle in a forward way, and I'm tending to bounce
back and forth, sort of along path, if you like, path, picking up something
new from each path as I go along.
Edward: So how does this compare to before you did the course?
Steve: I think before I was sort of slowly sauntering along one path.
Edward: Really!
Steve: Yeah.
Edward: So perhaps this made you more aware of the different choices you
have?
Steve: Yes, absolutely but I think before when I was sauntering along the
path the things I could have done were like Billboards along the side of the
road that I looked at as I passed them and they fade away for some of them
would have been filed away for later, but now I have an array of pictures in
front of me and bright colours, and when I close my eyes and think of the
future, this is what I see, lots and lots and lots of different pictures. I don't
ever believe that I can achieve all of them because I just don't have enough
time, some of them are unachievable, I know that, but ... you're going to
ask me how I know this now, I just know. (laughs)
Edward: No, I was going to say, OK at the moment you might say that
some of them are unachievable. But perhaps it's not that they're
unachievable, perhaps it that at the moment you don't see that as being
Steve: Oh yeah I do, I do, and I find it a lot more comfortable and safe to do now than I would have before, not that I would be ... not that I would be a very anxious person or anything, but I'd be aware of where I need to ... I suppose I would be aware of where I need to, what am I trying to say, the word... linguistics? No. language? No. The word? I suppose I'm more careful at how I go about it, I would choose the times that I want to deal with things more carefully so that I'm at my optimum for dealing with it, you know, not that I mean there... because of NLP and because of the re-framing, and being aware of changing sub-modalities and that, it has become a lot less sinister if you want to.... A lot more enjoyable because, because one thing I like doing is playing with my computer, and what I love about it is the fact that whatever you do, you can go back and look at it, and you can change it, and this was something I wasn't aware of you could do with the human mind, and since I've learnt that I play more with my mind than I do with the computer, you know, which isn't very good for (indistinct) purposes ... expect from computer... it's really fast, but that's my brain, it's the same, but I, yes, there's definitely, I suppose that's a change that I wouldn't have been aware of, but I'll probably be aware of it in my own way but not always in consciousness, I would say.
Edward: Is it fair to say that may be you, though it's not maybe not an attractive time of your life to look back at, you can now see things in that time of your life that are attractive to you and that you can maybe take those out of the rest of it and use those resources that were there and be aware that it wasn't all that bad.
Steve: Yes. I would find myself saying that a lot actually. It wasn't all that bad and it could have been a lot worse, but it wasn't, that's the thing, and in many ways I suppose I think it's great to be able to have the opportunity to do that, you know, whereas I wouldn't have been aware that there was that opportunity before.
Edward: Well at the moment taking this is that we all tend to look at what's happening to us now, and as you say, you look towards the future, do you find this has maybe changed the way you can now look at what's happening to you now and in the future, because often things that happen in the past do affect how we are now, and you can come across situations that will remind you of past events, and those situations will then automatically cause a repulsion to you, 'God no I don't want to deal with that sort of thing.'! Do you find that now that's changed at all?
Steve: I'm not sure I've experienced it, since now on the course I haven't really experienced anything, anything so I couldn't speak further for the present, but for the future I believe that I could handle things a lot better, not merely a lot better but with a lot more confidence, a lot more ease. I'm sure I'll mess things up as well like, but you know, the thing is, with the resources from the past experiences that would be considered negative or yucky, ... yeah I think if similar developments happen in the future at least I have the options of looking at them better, you know. I don't think that anything would startle me or shock me in those kind of things you know, not that they don't anyway, ... I don't get upset very easily anyway you know. Because if I feel... It's part of my Identity. I'm a person whose, who I believe is very very strong, very hard, not easy to faze, and I don't get upset easy, easily, ... and that's great, that's what gives me my external confidence, the fact that internally I believe that nothing can harm me, except perhaps a nine millimetre bullet. (laughs)
Edward: Well, there are things that you really don't have a lot of control over. But putting that aside, the nine millimetre bullet, there's probably one waiting for all of us somewhere in one form or another, it's another metaphor, something waiting to jump up. So however it doesn't have to be connected to past events. If something suddenly jumps out at you in the
near future, do you find that NLP, along with all the other things that you
have, the meditation and all the other things you've found useful for you,
gives you possibility to sort your way through these things better.

Steve: With NLP, yeah, I believe that I will get through things easier, I don't
know how much better, but easier.

Edward: So there is the possibility that you can sort things or deal with
things much easier than ...

(tape turn)

Steve: I found myself 'toting' towards desired state more than I used to
before. To ... as many people do, I've tended to do things for shying away
from things that repulsed me, to avoid pain more than anything, that I
suppose was one of my chief motivators, was doing something in order to
avoid pain or disappointment or hurt, or, you know, all the other wonderful
things that go with it ... and I found myself checking out the future more
than going back into the past, I suppose, yeah, I suppose previously the
NLP course, I used to tote to a lot of past experiences, and not to the
resources of those past experiences, but no I've found myself going really,
using the desired state, or even parts along the path for getting to the
desired state for my toting really.

Edward: OK. What I'd like to do, this is coming to the end now, what I'd like
to do is just have a picture, just before you started the NLP course, all that
time back so you can see yourself in that picture maybe.

Steve: I can't at the moment. I'm aware of it, but ...

Edward: OK, If you can just look at yourself in the two pictures, are you
seeing any significant changes?

Steve: In one my facial feature's aren't so pleasant, in the other they're
much much more happier, smiling. My eyes look brighter for some reason.

Edward: See any differences in the person?

Steve: Physical changes or the way the person is responding or how the
person feels? There's definitely, I mean I'm feeling that now, there's a...my
stomach... there's a definite change in the feeling, emm, I think I've used
the words before, confident. ... I definitely feel more confident in the second
picture, I'm much more knowledgeable as well, I'm much more capable. But I suppose in the second picture I'm not particularly aware of what I'm knowledgeable or capable of. That's the strange thing, you know, it doesn't make ... it doesn't make a whole lot of sense in some ways, but it does because I know what it means.

Edward: That's good. Anything else you'd like to comment on?

Steve: No, I think I ... the main changes. I'll probably go home and now and in ten minutes 'oh I meant to say that!'

Edward: That's OK. Are you aware of these changes and the benefits you've gained from it, and the different resources you've gained and also the things that you're still not aware of that are in there bouncing around in your head, just know that you can use these whenever you want, and they will be there whenever you need them, when you want them, they'll suddenly go 'ah yeah, all these different things. OK. That's the end of the interview. The last thing I'd like to ask you is do you have any comments about the course itself?

Steve: I must say I thoroughly enjoyed the course I found it very very stimulating, very interesting and a great start for what I hope to be a very very informative area of study for me, you know. You know, I suppose a lot of people, from what I've heard them say, you know, they've come out, and they want to be therapists, they want to be this that and the other, and for me that's what I thought as well during the course, but now I prefer NLP as a private tool for myself, and I don't want to go out and be Paul McKenna or Michael Breen or any of these people. I don't even want to be Richard Bandler. I did the course, like, you know, it was quite you know, ... it was a bit short for my liking in so far as I was away on holiday for two of the weeks, pain in the ass, am I allowed to say that (laughs) yeah, it was very very interesting and very enjoyable, I must say, and for some reason, I don't know exactly why, I feel It to be of incredible value to me, and I know It will be continue to grow whether I want it to or not. Yeah, It was good. Yeah I really enjoyed it.

Edward: Is there anything you think we could change on the course to maybe improve it or make things clearer for people?

Steve: I think that maybe... I think that maybe the likes of the TOTE and the SCORE model and that, that they could be brought in a little bit closer, or a little bit forward maybe and ... maybe the conclusion of the course be a bit more refreshing than it was, I would like to have had the opportunity, no, I would like there to have been a direction where the class was ... not... yeah, I suppose, would have reviews in a bit more depth maybe, what we've covered in the course, just over maybe one or two days, not in depth, just a little bit ... (bleep) I think those, that's the main thing, otherwise I found the course quite professional, quite good.

Edward: Any last comments?

Steve: No, thanks for the interview.

Edward: Thanks for your time and we're glad you enjoyed it. Switch this off.
Appendix 5. 1 Bandler and Grinder's Metamodel of Language.

Bandler and Grinder identified three universal processes that occurred when experience was translated from the deep structure of internal sensory representation into the surface structure of language. These are deletion, or where detail is missing, generalisations, or statements giving information about the scope of the information, and distortions, which involve making connections between different levels of abstractions.

- Deletions, or statements where detail is missing

Simple Deletion (Information about Detail)

A deletion is a statement with insufficient detail, or missing information.

Example "I am uncomfortable" or "I don't understand".

Recovering the missing information is by questions such as

"About what? About whom? Uncomfortable about what?"

The predicted result of this type of response is that the missing information can be recovered and a fuller description gathered. There are a number of different kinds of deletions.

Comparative deletion

A comparative deletion is where the standard of comparison is missing. The key words to such statements are better, worse, more/less, greater, lesser, happier, sadder.

Example. "She's a better person, He's a worse player" The responses which would recover the missing standard of comparison are questions such as:

"Better than whom? Who says? Worse than what? How do you know?"

These kinds of deletions are so called because they involve making a comparison. It is as if the person using these words has to have some sort of internal scale or standard against which to compare their experience so as to arrive at their judgement. The questions that recover deleted information must also recover some of the processes by which the judgement has been made.

Lack of referential index.

This is typified by the presence of an unidentified pronoun.
Example: They don't listen to me, or that doesn't matter

The response to identify the non-specific pronoun could be
Who, specifically, doesn't listen? What, specifically, doesn't matter?

1 This is an extract from one of my training manuals. The information was derived from Bandler and Grinder (1975).
Unspecified verbs

These are verbs in sentences that delete the specifics of how something happened, where it happened, and when it happened.

*Example.* She rejected me, or he left me,

The response to this pattern is to recover the specific information about the experience, for instance:

How did she reject you? Where did he leave you? How do you know? What do you mean by leave?

Nominalisations

How often have you heard people say "I want a relationship", or "Justice must be done." The words 'relationship', and 'justice', belong to a group of words called nominalisations. They are words that are abstract, yet we talk about them as if they were 'real', almost as if they were three-dimensional.

However they do not relate to anything that has a concrete existence. Rather they are verbs made into nouns (like things or events), thus deleting the process or action of the original verb form. They are a very interesting group of deletions, because they act as if they change what was originally a process into what is then thought about as a product. We can say that they digitalize what was originally an analogue process.

*Examples.*

My *relationship is going well*

*I want recognition,*

*We must improve our communication.*

Here the words relationship, recognition, communication are nouns which presuppose that they have an independent existence external to the subject. They also imply that they can be possessed, rather as one does a house or a car.

The questioning here needs to re-establish the noun as a verb, that is, to rediscover the process or the activity that the nominalisation disguises, thus:

*What would people be recognising? How would you be communicating? How would you be relating?*

- Generalisations

Human speech contains messages about the application of their contents. The more generalised or abstract information becomes, the more it implies that what is being said is universally applicable. Quantifiers are a group of words that indicate the conceptual scope of the application of the content of the statement. They are generalisations, so they also indicate the degree to which abstraction has taken place. They are key words that indicate the beliefs of the speaker. They can in their turn also influence the beliefs of others.

For instance, the remark *women are always like that* presupposes that what the speaker believes women to be is universally true, and that there can never be any exceptions. Similar messages are pre-supposed by words such as *never.* These words indicate that the belief is universally applicable. Such universality is also
implied by statements such as *men are better at engineering than women*. Here the universal applications of the statement are conveyed through deletions.

**Universal Quantifiers**

These are words that imply that the scope of the information is universal, that is, perceived as always valid.

*Examples. She never listens to me!*

*No one tells me the truth.*

*Teenagers are always like that.*

If you are wanting to challenge the speaker, and uncover the specifics which have led to the generalisations, then your questions will needs to recover the exceptions, contradictions, counter-examples and alternative choices, for instance:

*Has there ever been a time when she has listened to you?*

*Are you saying that all your life every single person has lied to you?*

*Have you ever known a teenager not behave like that?*

**Limiting Quantifiers**

These limit the scope of the information being given. Words such as *only, just, sometimes, occasionally,* imply that the applications of the information are limited. Replacing a universal quantifier with a limiting one can alter meaning.

*I never get my sums right.*

*I sometimes don’t get my sums right.*

*You are always bad tempered.*

*You are sometimes bad tempered.*

**Modal Operators.** These are important words that inform you about the mode or approach someone is taking towards an activity.

Hall\(^2\) (1989) distinguishes six categories of modal operators.

- **Impossibility:** impossible, unable to, can’t, couldn’t, incapable
- **Possibility:** possible, able to, can, could, might, may
- **Capability:** can, could, able to, capable of
- **Desire:** want, wish, hope, would like, choose
- **Necessity:** necessary, need to, have to, must, should, ought to
- **Certainty:** am going to, will, am, is, won’t.

The most important thing that modal operators tell you is whether the individual using them is seeing that activity as a *possibility* or a *necessity*. People using many words such as *should, got to, have to, can’t, must,* are driven more by necessity. Others using words such as *want to, may, could, might,* are telling you that they have a choice in the matter, and may therefore experience a greater range of possibilities.

Modal operators can also give information about an individual’s cause-effect patterns of thinking. This may be uncovered by questions such as because? or what will happen if you don’t?

It can sometimes be useful to recover the hidden causes behind modal operators. We do this by recovering the outcomes or consequences of the perceived action. In this we can recover the hidden causes for the generalisation by using questions such as:

What would happen if you didn’t? Who says you should? What stops you? What will happen if you do/don’t?

- **Distortions, the connections in people’s maps.**

**Cause-effect**

This is where a sentence indicates that the speaker believes that a specific stimulus causes or caused a specific response.

*Examples*

I am depressed because I had an unhappy childhood.
Teenagers are lacking in concentration because of too much television.
His voice irritates me
You’re saying that to make me angry.

The response needs to recover the imagined process of the causal connection, thus:

How do you know that is the case? Really? How do you know that? What evidence is there?

It is also important to identify how an individual perceives him or herself in relation to an event. Are they at cause or at effect in a particular situation that they talk about? This can give useful information about whether they perceive themselves to be in control or not.

**Mind reading**

Such patterns imply that the speaker somehow 'knows' what a person thinks, feels and so on.

*Examples. You don't like me or He should know that I love him, or I know you are feeling uncomfortable or She looks very anxious.*

The response needs to recover the source of information and establish how the person arrived at that conclusion. Questions such as How do you know that? What is your evidence? are useful in this context.

**Lost Performatives**

These are patterns implying value judgements or opinions in which the source of the opinion or belief is missing. To use a lost performative, there must have been some comparison to an unspoken referent. Every time someone uses words such as good, bad, awful, super, interesting, boring (some would call these value judgements) he or she must have used some kind of internal measure against which to compare the experience.

*Example: It's bad to be inconsistent or Volvo's are best.*
The response is to recover the source of the opinion or the belief strategy operated by the speaker, by using questions such as:

*How do you know it's bad?*
*According to whom?*
*Who says?*

**Complex Equivalence patterns**

The structure of complex equivalence is $a=b$; in other words, a statement such as *making mistakes means I'm a failure, I can't do maths because I'm a woman, or you can only be a good politician if you care about other people.* Words that link such as *means, because, if* often denote complex equivalences. This process lies at the heart of the structure of beliefs, how individuals *connect* different aspects of experience, and generalise them to apply to more and more examples.

*Being a good wife means always doing the washing up* is another example of this type of connection, where *concept a* is linked to *concept b*. Here being a good wife is related to 'always doing the washing up'. 