Individual Schools, Unique Solutions

Tailoring approaches to school leadership

Adrian Raynor

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Effective school leadership depends on developing an understanding of people, organisational learning and organisational processes. However, each school has a unique set of circumstances, and prescriptions for leadership that apply to one school may well not apply to another.

Individual Schools, Unique Solutions turns away from the highly prescriptive practices that often fail to provide a workable solution to specific problems. The author demonstrates that by understanding the processes influencing any situation, a practical and unique solution can be achieved. The book draws on systems theory and aspects of complexity theory, an emerging science aimed at understanding complex phenomena and organisations. Through understanding the processes that go on in individual schools, readers will be able to see how creative solutions can be developed.

While addressing many of the issues commonly faced by headteachers, the principles described are equally important for all other levels of school management and the book will be of interest to all those in management positions in schools. *Individual Schools, Unique Solutions* is about developing effective leadership through understanding and is a guide to thinking afresh rather than looking for another quick fix prescription.

Adrian Raynor, a former headteacher with some fifteen years' experience, is a freelance education management consultant and an accredited performance management consultant. He is involved in online and face-to-face training for the UK's National Professional Qualification for Headship (NPQH) and middle management courses, and lectures on the doctorate in education course at the University of Huddersfield.

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Foreword

All people involved in the complex task of managing schools need all the help we can get, and need it in forms that are lucid and clear, as well as realistic. What I admire about this book is not only that it deals with the reality of the everyday, including those periods of confusion and the need for multiple and instantaneous decisions, but that it does so both with understanding and with good advice. We recognise that the author knows what it is like to run a school and the difference between rhetoric and reality. We also receive clear guidelines so that the chaos theory that is used is a means of analysis and not an impact on the content!

On one occasion when I took up a leadership post with about 75 teaching staff, I began not by re-structuring, a device used by some to demonstrate who is boss, but by making enquiries about what the staff thought were the strengths and weaknesses of the organisation. I have always thought that some empirical evidence, and listening to considered reflections by experienced colleagues, was a sensible thing to do. One of them, however, said that in his opinion he would not start from where we were.

This was like getting government advice: accurate and unhelpful. The fact is that we were in a particular position and that was the one from which we had to progress. The remark highlighted the longing to make a completely fresh start, as if one were not shaped by the messy past. This longing might be impossible but it captures the tone of many management books and courses. Decisions and directions sound so smooth. We hear so much of the positive language of management-speak, it sometimes sounds as if solutions were so simple. It is as if the human element did not exist.

This book is a refreshing change since it deals with a reality with which we are all too familiar. No management manual can deal with real-life problems as slickly as the ways in which the gurus talk so theoretically and delightfully about them. Even those who believe the rhetoric can be undermined by reality. I remember one head telling his team for over an hour about how much had been learned on a management course about not talking too much.

One of the strengths of the book is the use of case studies. We realise that it is in the mixture of details that the problems lie; in the psychology of individuals, in the hidden motivations and in the contradictions. We also see that solutions take time. They rest on a series of decisions and not just on one simple plan.

The only book I can think of that combines the skills exhibited here is long out of print. This was Cohen and March's book on the American College Principal. It was startling and funny in its debunking of the myth of the all-powerful decision maker who would, through learned leadership, transform all. It was, nevertheless, well received at the time since it was so clearly true. What Adrian Raynor has done is to go one better. He acknowledges the truth of leadership but shows how changes can be made. He offers the kind of support that is well founded and fruitful.

The copious tables are more than symbolic. They demonstrate the desire to be constructive and pass on simple tools that do not over-simplify. Whilst the evidence is embedded in complex reality there is still an underlying hope and a demonstration of what is possible.

A lot of attention is devoted in our time to notions of leadership. This interest has created a rhetoric of its own. Too often the rhetoric has sounded like the counsel of perfection, and we have all felt, at times, diminished by it. This book is different. It starts with how things usually are, and then deals with it.

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Many people have helped, gently cajoled and often supported me in writing this book, sometimes consciously, sometimes unwittingly. I want to thank Loraine Powell, now a senior lecturer at Leeds Metropolitan University, for her total intelligence and support during my studies and later. I also owe a debt of gratitude to my colleagues who work with the NPQH (National Professional Qualification for Headship) for all their insights and conversations along the way, and especially to Duncan Gawthorpe, Kathy Thompson and Jane Hewitt for their interest in the book. Many headteachers, and especially those involved in the case studies, gave unstintingly of their time and their honesty, and were enormously helpful. Finally, I must thank two people without whom this book would never have been possible. Professor Cedric Cullingford, of the University of Huddersfield, has been a constant source of inspiration and motivation over a number of years, and it was he who first suggested I write the book. However, without the support and typing from my wife Sue, it would never have been completed, I'm sure. My sincere thanks go to all of you.

Introduction

The world of schools has become a complex place to be, especially for school leaders and managers at all levels. In a time of massive change, they need wisdom to understand and handle the many interwoven processes that occur in schools and between schools and their environments. They spend much of their time multi-tasking and holding many inter-related items in mind at once, and they are under great pressure to deliver results. Furthermore, in this complex world, although there may be some similarities, each school has a unique set of circumstances in its context. In these circumstances, prescriptions for leadership that apply to one school may well not apply to another.

School improvement over the last decade or so has been led very much by centrally determined improvement initiatives and a stress on accountability and these have played a strong part in changing the face of practice and professionalism in our schools. In this context, this book pursues two central themes. The first is that for school leaders and managers, handling complexity is a major skill rooted in a particular set of circumstances, and this means that understanding what is happening and how things happen is more important than tips or prescriptions about the way they should lead. Having a clear understanding will often in itself suggest how to act in a way that is relevant to the situation. The second is that following many years of central control and a different profile of the skills and professionalism of teachers, the time is now right for the next stage in school development where schools can develop more creative practices of their own applied to their own circumstances.

To support these themes, then, the book looks in some detail at the complexity headteachers face. Complexity theory itself is an emerging science aimed at understanding complex phenomena, and its usefulness for understanding complex organisations has been growing. In the book, I use aspects of this and systems theory to help to understand the processes that go on in schools, and how creativity can be developed. We all use theories, even if they are not apparent, to help us to explain events. Using a complexity theory framework helps us to look at things in a new light and

from a different perspective. However, I have kept descriptions of it to a minimum level sufficient for the reader to understand basic ideas put forward: it is not an academic, detailed account of the theory. Consequently, I have tried to keep references to theory simple and intelligible, whilst preserving the integrity of the ideas in it.

To illustrate the ideas, I have used wherever possible examples from my own PhD research. Since this relates to English schools, I use the terms headteacher, head or deputy head rather than principal or vice principal. Although examples relate largely to headteachers, the principles are important for all other levels of school management and the book will therefore be of interest to all those in management positions in schools, or training for such positions, as well as to those in university education departments.

The book, then, is about developing effective leadership through understanding. It is a guide to thinking rather than yet another prescription. Though you can dip into the book at any chapter, a reading of the last section in Chapter 2 will give you an initial feel for some of the complexity theory ideas first. After that, the chapters are briefly as follows.

Chapter 1 looks at the importance in leadership and management of the ways in which we think and form our views of the world, and how important creativity and wisdom are. Chapter 2 challenges the assumptions we have about the rational and logical in the process of management, and shows how managers are faced with paradox, uncertainty and illogicality. Chapter 3 goes on to explore the many forces that subvert managers' attempts to control what happens in their school, and Chapter 4 then uses case studies to support the ideas in previous chapters, and to illustrate how complexity theory can be used to understand the events happening in the schools during times of great change.

In Chapter 5 we look at the way school leaders have to keep many different forces and influences in mind at the same time, 'juggling' many different factors all the time. These forces and factors mean that each school is individual, and the leader's skill is in keeping coherence between them. Chapter 6 then moves back to the idea of control, and is about the subtle ways leaders can move the school forward even though they cannot be in full control.

The remaining chapters move into more practical territory. Chapter 7 shows that leadership must be a paradoxical phenomenon if the right balance is to be found between promoting creativity and also keeping the school stable. Chapter 8 explores the fundamental role of relationships, and they are seen as the bedrock of school creativity and development. In Chapter 9 we look at what is needed to give the school the internal strength to constantly develop in response to the demands made of it, and Chapter 10 suggests some areas to consider to help the school to develop its own creativity. Finally, the last chapter revisits the concerns of Chapter 1 and looks in some detail at the kinds of thinking and understanding a school leader needs to handle complexity and to promote creativity.

Chapter 1

In the mind

In management training sessions I sometimes ask the group to close their eyes and leave their minds blank for one minute – that is, not to think at all during that time. With very rare exceptions they find this feat impossible. Unbidden thoughts just seem to arise in the mind, and the exercise shows just how wayward and unruly it can be, and how little control we often have over our thinking. We can be forgiven if we sometimes wonder who is in charge, when the mind thinks thoughts we do not even wish to think. We like to think of the mind as our servant, but if we are not careful it can be our master. This chapter is about the mind, and the ways it can deceive us or support us in our task as leaders and managers.

Effective thinking is at the heart of good management and leadership, whether we are concerned with strategic planning, settling conflicts on the staff or running a meeting. If our thinking and with it our perceptions are faulty, then all the management techniques in the world will not help. For example, it is now fairly well agreed that leaders need to be able to adopt a range of styles in order to handle different situations. Hersey and Blanchard (1982) promoted a situational leadership model which advocated four leadership styles applicable to four different employee 'types', and the Hay Group's classification of six leadership styles is extensively used in headteacher training in England (Goleman *et al.* 2002). Leaders are exhorted to use the styles most applicable to the situation they face.

This is, of course, very sensible and useful, but does beg the question of how the leader actually carries this out. In the first place, as leader, what skill do I use to understand the situation deeply and accurately? If I decide a situation requires me to use an 'authoritative' style, how confident can I be in my reading of the situation that has led me to this decision? For example, are the staff that I have decided need this approach actually as devoid of appropriate ideas as I have judged, or are other factors operating? However, given that my perception and judgement have been accurate, a second problem arises. How do I know how to carry out this style effectively? Whereas one person can practise a coercive style effectively, in the same situation another person can produce more harm than good. Assessing the

situation needs perception: knowing how to act needs judgement. It is at these two levels that effective thinking is needed.

We often fail to realise how important the deeper cognitive abilities are, and this is often due to a 'checklist mentality', where complex ideas are reduced to a series of bullet points which offer us the illusion of understanding. As Guy Claxton (1999) points out, they trick us into thinking we have planned or done something when in fact all we have listed is a series of desirable actions. What we are in desperate need of is deeper thinking and perception, especially the latter. I believe there is something very true in Chuang Tzu's idea that skilled people spread their attention over a whole situation, become absorbed in it and then react spontaneously with a confidence and precision impossible to anyone who is thinking out moves and applying rules (Graham 1981). In other words, a major key to skilful practice lies first and foremost in accurate perception and understanding and this will affect our judgement of how to act. In the rest of this chapter we will look at ways in which the mind forms perceptions and judgements.

Cognition and leadership

If as school leaders we are to perceive accurately and judge our actions wisely, then the cognitive dimension of leadership is fundamental. I must make clear, however, that by cognition I mean much more than IQ. Several studies in the past have shown that this was not a particularly significant predictor of leadership success. A wider concept of cognition includes emotions and beliefs, and understanding these within ourselves and being sensitive to them in others. Although cognition is generally regarded as separate from emotional intelligence, both are required for understanding and perception. Goleman (1998) and others have made a strong case for the use of emotional competencies at work. Emotions and beliefs often exist at an unconscious level, or are not obviously shown in behaviour, making perception of them difficult sometimes, even within yourself. Even so, they act very powerfully on what we do, and on what we feel capable of. The power of beliefs and emotions is graphically shown by Mapes (2001) when he describes a hypnotist who plants in subjects the belief that $100 bills weigh 200 lb each. Much as they were drawn towards picking up $100 bills scattered around, they simply could not lift them! Maybe the old saying 'I'll believe it when I see it' should be turned on its head. It might be more accurate to say 'I'll see it when I believe it.' What we believe – about ourselves and the world – has immense power over our behaviour.

Canadian management professor Elliot Jaques (1989) stresses the importance of cognition in leadership. As you move up the ladder of management, the complexity of what you have to handle increases: in order to lead well, you must as a minimum have the requisite cognitive complexity to handle this new level, a fact that anyone who has moved from deputy head to head

of a school will recognise all too well. There is a quantum change in the level of cognitive complexity needed to handle this new role, and many would say nothing had prepared them for this change.

Similarly, the Cranfield School of Management clearly noted that certain 'meta-abilities' were needed for effective management and leadership, and were 'inextricably linked to the idea that the manager's underlying psychological development is essential to effective performance' (Butcher *et al.* 1997). The four meta-abilities they describe are personal psychological attributes that underpin managers' abilities to exercise the range of managerial competencies and influencing skills. The four meta-abilities they describe are shown in Table 1.1.

The Cranfield competencies show how personal cognitive abilities, along with self-knowledge, emotional resilience and drive, underpin management practice. These skills enable effective perception and judgement, but again, this is a checklist. To enable these thought processes we need sound understanding. First we need to understand ourselves, possibly the most complex system on earth. Cognition here is concerned with our own minds and emotions, how we construct our reality, why we respond to external events in one way rather than another, and what thoughts and emotional behaviours are counter-productive to our effectiveness both as leaders and as human beings.

Second, we need to understand the people we work with, first as individuals, but we also need to understand the complex dynamics that arise within

Table 1.1 The Cranfield meta-abilities

Skill	*Components*
Cognitive skills	Key thought processes required to 'read' situations and understand or resolve problems, comprising • Cognitive complexity: recognising and holding conflicting ideas, taking multiple perspectives • Cognitive flexibility: ability to shift perspectives, stay open-minded and view possibilities • Visionary ability: thinking long term and seeing strategic direction • Gaining clarity: ability to sort and analyse data and use information • Perceptual acuity: ability to perceive and interpret what is happening interpersonally
Self-knowledge	Revealing own behavioural habits, often long-standing and subconscious, and their effects
Emotional reliance	Self-control and discipline Managing emotions and being resilient Balanced view of self
Personal drive	Personal achievement orientation and motivation. Ability to motivate self and others, and to take risks

groups of people as they inter-relate – a department staff, a school staff, a board of governors, a body of parents. Even within small groups, the dynamics generated can be very complex, and often silent and invisible, as Nias and colleagues found in their study of small primary schools (Nias *et al.* 1989).

Finally, we need to understand the school as an organisation – how it works, and how it interacts with its environment. In other words, we need to construct our understanding of how our school world operates, and this is our model of reality. It is to models of reality that we now turn.

The mind and reality

The nature of reality is a problem that has exercised the minds of philosophers for millennia. The physical reality that surrounds us is transmitted in an indirect way through our sense organs: this is the only, and imperfect way in which we have access to that reality. I say imperfect because there is quite clearly not a straightforward transmission of the external 'picture' on to the internal screen of our minds. A simple and obvious example is the way particular light frequencies are interpreted as colour, or the way vibrations in the air become sound. Our minds produce the sense of colour or of sound. Thus what we experience and live by is our internal 'map' of reality.

The problem is that we employ many filters before this map is constructed. Our understanding is first in the form of sensory-based maps, which then become embodied in language as we symbolise our experience. However, the sheer amount of sensory data to which we are exposed means that our maps have to be simplified in some way, just as physical maps of towns and countries are simplified. We therefore delete, generalise or distort much of the information presented to our senses, and make presuppositions against which we do this. We carry out these processes according to filters, embodied in beliefs, values, memories and so on, which may be innate or acquired through education and culture. We each construct our maps according to a whole set of personal filters, which means that all our maps are different in some way.

Figure 1.1 shows how our mental models, our maps of the world, develop. The outside world of things, people and events acts on our senses and we interpret these signals – subject to presuppositions, distortions and deletions. Our interpretations of the data form or add to our mental models, and it is through these that we create and discover meaning in what is happening. Of course, the process operates both ways. The meaning we construct can influence our mental models, which then influence our interpretation of sense data, and the signals we send out. The meaning we have ascribed to things in the past frames the way we see them in the future. In other words, we may see what we expect to see.

This understanding, though we usually pay little regard to it through our day-to-day living (for example, we just say the weather is cold or warm, without considering that to be simply based on interpretation of sense data), is of

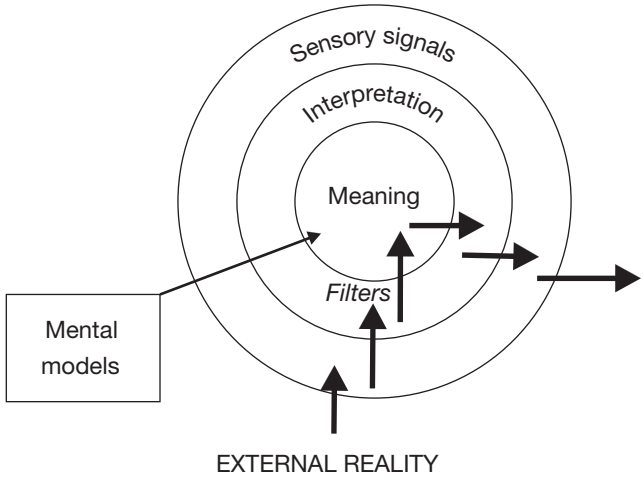

Figure 1.1 The development of mental models

great importance to school leaders and managers, since the same process of creating meaning from sensory signals applies in the social and managerial spheres. Here again we create maps of reality. Based upon the sense signals we receive from others, our interpretations build up meanings about the internal processes, feelings, motives and abilities of those we work with. It is in these meanings that we represent their reality. But once again this is not their reality but their map of it; if our interpretations are faulty, our map will be too.

A simple example comes from my first few days as a headteacher. At the first meeting of the senior management team, the behaviour of one of the team caused me concern. I saw him frequently looking down at the floor, or into space, with his head and gaze averted from me. When I asked him a question about the subject in hand, he spoke rather curtly and asked what I was talking about. As these visual and auditory cues continued, I noticed them more and more, and interpreted them as indifference or aggression towards myself. I began to put meaning on to this. Yes, he was older than me, and resented my getting the job. It all made sense. He was against me. This feeling became more and more sure as the evening progressed and I determined to tackle him about it the next day. When the next day came, I was just steeling myself to call him in and 'have it out' when he himself came to me and asked if he could leave early to visit the doctor to have his ears syringed. He said that at the meeting last night he could scarcely hear what was being said!

We depend upon our models of reality, then, for three main areas of understanding – understanding ourselves, understanding others, and understanding how the world works – and our models vary from person to person. However,

over time, the process can take on a cultural perspective as a group of people in a school, an organisation or a society adopt certain interpretations as standard. Once this kind of standardisation has developed, it is likely in turn to influence the way individuals see things. This is the world of paradigms.

Paradigms

When mental models become widely shared they can become paradigms – large frameworks within which we interpret data. When for some reason there is a change in these large-scale models, people speak of a paradigm shift. The paradigm idea first exploded into the world when Thomas Kuhn (1962) used it to describe the overall framework of basic assumptions used by scientists when they analysed data – for example, a classical scientist observing a movement that seems to have no cause, would assume that there was some cause generating this effect, and would search for it, based on Newton's laws of cause and effect (Marshall and Zohar 1997).

Paradigm changes occur when what is observed can no longer be understood in the framework of the old paradigm. In science the Copernican revolution created a paradigm shift, which in turn gave way to others as the framework for understanding the world changed. The Newtonian paradigm is probably one of the longest and most useful, but this too has given way to relativity, quantum theory and complexity theory, none of which could be understood in the Newtonian framework.

Once the idea of paradigms became accepted in science, it became clear that they were also relevant to other areas of life. Management, for example, has also gone through a series of paradigms, as have other areas of natural sciences. We will examine later the way much of the present education management paradigm owes its existence to classical, especially Newtonian, science, and how, if 'science' is to be used at all to inform education management practice, other paradigms might be more useful. As a mental model, then, the paradigm in which we work in any part of our lives not only affects our interpretations, but determines our perceptions as we 'arrange' things to coincide with our beliefs and models, whether conscious or unconscious.

Ofman (2001) describes an established paradigm and one that is emerging. The dominant one now is based on the idea that the world consists of disconnected components – everyone and everything is separate – and that these components can be controlled. This results in a competitive 'I versus you' thinking which influences perceptions and actions. It stresses that once you know something, you can control it, and keep stability, stasis or non-change. In schools, these assumptions have their outlets in, for example, school managers anticipating resistance to change, and therefore feeling the need to use their power to push it through, exerting external control on people in school through planning systems and techniques of motivation, while people unrealistically hope that nothing will change.

Ofman claims a new paradigm is currently emerging which is based on connectedness rather than separateness – everyone and everything is connected to everyone and everything else, and change, development and movement are normal. The events of and since September 11, 2001 in New York really drive these points home, and show how impossible it is for individuals to behave independently. This paradigm sees organisations like schools as living organisms rather than machines, where people are the creators of their own realities and are responsible for themselves, where the world is integrated, and where a constant stream of events continually influence each other.

Gharajedaghi (1999) points out that paradigms usually change because of a frustration when developing events make the conventional wisdom no longer viable. He describes two significant paradigm shifts in the world of organisations: in the structure of organisations themselves, and in the way they are analysed. For organisations he sees a shift from the 'mindless' to the 'uni-minded' and then to the 'multi-minded' organisation. In the early twentieth century in the industrial age (and often beyond) our organisations were built on the machine metaphor. In this model, people were used as parts in the machine, with jobs of limited scope, but each job contributing to the full 'machine's' output. Why this is a 'mindless' system is that the organisation has no purpose of its own, but is a tool of the owner to enable him to make a profit. The parts of this machine, the people, have no choice about what to do; it is highly controllable and predictable, and, above all, efficient for its purpose.

The metaphor of living systems produced the uni-minded system of organisation. Such a system, like a human being, has one mind and a purpose of its own. The single 'brain' is the executive function, which monitors information to keep the whole organisation 'in balance'. The 'parts' do not display choice – if they do, then there is conflict.

Multi-minded systems are social organisations, and in these the members exercise choice of both ends and means as defined by their own purposes. It is easy to see how this classification applies to schools, where teachers definitely have their own views about what a purposeful education is, and professionally need a degree of autonomy over how to achieve it. In such an organisation, there are three levels of purpose – that of the wider society, that of the organisation and that of the individual within it. The challenge of such a system is to align these three levels of purpose. This seems to me a clear description of problems associated with education, where professionals are fulfilling their own, their students' and society's needs at one and the same time. Shared values and culture become the chief ways of creating a cohesive whole.

The second paradigm shift Gharajedaghi notes relates to the nature of inquiry. Within classical science paradigms the concern was with independent variables – to understand a system, we needed only to look at the impact each independent variable had on it and the sum of the parts would be equal

to the whole. This is analytic thinking – breaking things down into their constituent parts, an approach to thinking which has been dominant in all the sciences, probably to emulate the successes of physics post-Newton. The result has been that many 'emergent' properties of phenomena – factors that only arise because of the interactions between things – have been ignored. These are now becoming more and more recognised as important in science. What were seen as independent variables may become *interdependent* variables, producing a much more complex scenario. As systems become more complex, understanding interdependency requires a different way of thinking. As we will see later, this requires responding to the triple challenge of interdependency, emergent properties (through self-organisation) and the exercise of choice.

The need for creativity

In the drive to improve standards, the dominant paradigm in English education for the last decade and more has been based on providing top-down improvement initiatives. At the same time, strong accountability mechanisms in the form of league tables, inspections, school self-evaluation processes and the like have 'encouraged' schools to work harder, and have focused them on academic outcomes in particular. One unintended outcome of these processes has been a tendency for teachers to become less creative in their approaches to pupils' learning (Raynor 2002). This may well be due partly to their concern to keep aligned, for safety reasons, with the prevailing wisdom, as they perceive it, within inspection criteria, or to the need to 'guarantee' results, or simply to the lack of time. Whatever the cause, one experienced LEA teacher trainer explained:

> One of the things I've noticed about working with teachers over the years . . . is that long ago teachers used to be very stroppy people to work with. They'd be challenging you at every step along the way. . . . Now they're easy. You almost could say anything – oh, right – tell us what to do. And I think that's been one of the bad side effects of what's been happening to teachers. And some heads – not all by any means – because for some it suits them well that the teachers are fairly compliant again. But for some heads it seems that what's got lost is this, this real kind of in-depth professional challenge . . . to each other (LEA Inspector).

A head whose school was placed in special measures after an inspection told how the staff had actually asked her to tell them what to do – to direct them.

I am sure many will hotly contest the idea that there is a tendency towards reduced creativity. They see teachers working very hard developing and planning programmes of study, and there are many school improvement strategies

in place. The key question is what kind of learning this represents, and whether at a time of such social change, it is the most appropriate and the most sustainable. The concept of double– and single–loop learning (Argyris and Schön 1978) can be used to consider this question. A number of different models of single– and double–loop learning have developed from Argyris and Schön's model, but a simple way of looking at it is shown in Figure 1.2.

In single–loop learning we see the outcomes of our actions, and depending on what these are, we either continue or change the actions that are leading to them. These actions are based upon the operating norms, or mental models, in current use. They form a kind of unwritten set of rules according to which we act. These 'rules' are not questioned, with the result that this learning consists of more of the same, only better. It is about improving, but within the current rules (Swieringa and Wierdsma 1992).

Double–loop learning is more complex, and theoretically comes into play when corrective single–loop learning is no longer effective. Here there is a second feedback loop which questions the underlying assumptions that have been producing actions, and may lead to a change in the mental model being used. It is a rethinking of the way we think about things. This new mental model then replaces or modifies the existing one. It is the development of a new way of looking at the world by questioning underlying assumptions. This complex learning is essential, claims Stacey (1996), for innovation and creativity. This is what Hargreaves (1998) means when he suggests that although government emphasis on tried and tested methods is welcome, longer-term effectiveness will depend on teachers' ability to create new knowledge. Looked at from this perspective, it seems clear that the vast majority of learning by government and schools as they improve is single–loop: that is, more of the same, only better. As one head asked, 'What do we do after we've done all the tricks?'

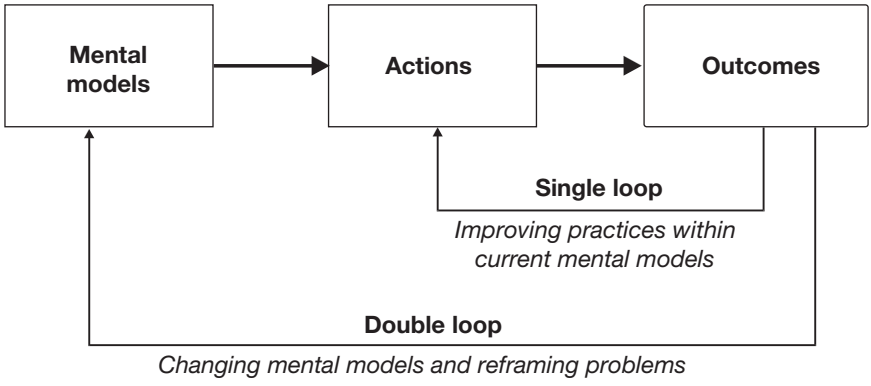

Figure 1.2 Single– and double–loop learning

Perhaps there are three ways in which the creativity of teachers needs to be encouraged. The first is in their ability to respond appropriately to the needs of their own students. Central prescriptions cannot take into account the nuances of context that teachers experience. The second is in the nature of classroom interaction, where much of the teacher's skill is intuitive rather than deliberate. Atkinson and Claxton (2000) stress the complexity and dynamic interactions involved in teaching a lesson, where the context is constantly changing. This implies an ability to react quickly to changing patterns of events in the classroom. The balance between intuitive processes, reflection, implicit theories and more objective theories (Atkinson 2000) is too large an issue to explore here, but it is clear that in practice, teachers must respond to the classroom environment and dynamics in fast, real-time sequences of plan, execute and review, constantly modifying plans as they go.

The suppression of these two modes of creativity in the classroom is becoming more apparent. In one survey, nearly two-thirds of those who left teaching wanted a job with more initiative and creativity, factors that were more important than pay. Reid *et al.* (1999) were critical of 'recipe' teachers and teaching as shown in the literacy and numeracy hours. Although the recipes may be props for less competent teachers, they say that teaching is too complex for such recipes, and that all teachers need to become problem-solvers and thinkers. Jenkins (1999) found science teachers demoralised by the National Curriculum, which was too inflexible to allow them to meet the needs of their pupils. Even the notion that they could decide *how* to teach was being steadily eroded by the promotion of 'best practice'.

Addressing the needs of student teachers, John (2000) questions the dominant method of lesson planning 'which is increasingly supported by external effectiveness criteria', suggesting that intuition needs to be given a more formative role – 'ruminating in the bath, mulling over ideas in the car, thinking about lessons in bed are perhaps as powerful as those tightly scripted plans with their narrow objectives and endless evaluations' (John 2000: 103).

The third need for encouraging creativity is to enable the creation of curriculum at grass-roots level and its eventual dispersal through the system. We will consider later in the book why this element is so important. It is clear, however, that promoting creativity needs to be a key function of school leadership, and this issue, along with that of adopting different mental models to enable it, will be central themes running through the book. The promotion of both these will demand wise leadership, to which we now briefly turn.

Wisdom

Understanding mental models and paradigms can help us to perceive situations and events more accurately, and to be more aware of what is happening. To then follow this perception by appropriate action we need another cognitive ability – good judgement.

This is applying wisdom, which the *Oxford* dictionary defines as the 'capacity of judging rightly in matters relating to life and conduct' and the *Concise Oxford* dictionary as 'experience and knowledge together with the power of applying them critically or practically'. However, despite the folk understanding of wisdom it is an area that has received little research. It has generally been regarded as something that develops with age and experience, but this is not necessarily so. A very experienced LEA inspector was very clear about this, having seen several young heads who exhibited all the attributes of wisdom in their decision making. De Bono (1996) agrees with this, especially realising that some older people are not wise at all, and some younger ones are wise beyond their years. This is why he believes we can learn a lot about wisdom, though it is an area that features little in the literature.

Edward de Bono draws a distinction between being 'clever' and being 'wise' that helps us to understand the way the two qualities have been perhaps confused in earlier management studies and takes us back to the centrality of perception. For him, perception, whether conscious or subconscious, is at the heart of wisdom, and most faults of thinking are faults of perception. Such faults are brought on by using faulty frames of reference to categorise perceptions, perhaps seeing only parts of situations, or framing them inadequately, or having feelings and emotions that distort our understanding by causing us to 'select' what we see. (Othello's inexorable reaction to Desdemona's 'infidelity' demonstrates such distortion through emotion.)

As our systems become increasingly complex and interactive, human perception finds difficulty in coping. Outcomes are often counter-intuitive; it is difficult to get a feel for them and we need to develop techniques to handle this. Increasing the breadth of perception, for example, can be developed using what he calls attention-directing tools. Wide attention is a skill used by heads as they work in their minds on several issues at a time: it is multiple processing, and redefines our common understanding of attention span, which normally refers to keeping our mind on one object for a significant time.

Other key points about the constant factors of wisdom de Bono makes are:

1 It has to do with the broader 'helicopter' view. Everything is seen in perspective and in relation to everything else.
2 Wisdom needs 'slow thinking' to avoid falling into habitual patterns.
3 Wisdom sees through surface appearances.
4 Wisdom imagines possibilities.
5 It takes place in perception – it triggers emotions and it can change them. You can change your perceptions and, as a result, the world.

Other views of wisdom have suggested that it is an integration or balancing of cognitive and emotional processes (Birren and Fisher 1990), or that, according to Socrates, being wise was not the possession of a high IQ, or

being a theoretical physicist, but being a person who searches for timeless truths away from the distortion of the senses. Csikszentmihalyi and Rathunde (1990) see it as a holistic cognitive process that recognises relativity and has the ability to assume contradictory points of view, that acknowledges the inter-relatedness of all experience and the inevitability of change and transformation. The approach also adopts a 'meta-systemic' approach – i.e. is reflective and integrative. Finally, Sternberg's (1990) research suggests several qualities of wisdom. Wise people not only have knowledge, but also show meta-cognition, or knowledge about knowledge. Simply put, this means they know what they know, don't know and can know given the current limits to understanding and knowledge. In this sense, their knowledge is very practical. They resist automatic thinking but are able to look for and detect it in others, recognising 'scripts' and automatic assumptions. They look to understand why people think, speak and act as they do. Wise people are comfortable with ambiguity in life; they see it as inherent and fundamental to the nature of things. Such people, because of this, can maintain calmness in situations that would be most worrying for others. Wise people are usually motivated to attain a deeper understanding of the meaning and structure of events, and learn from these events in the environment. Two other qualities he mentions are 'sagacity', which includes knowing oneself, having concern for others and understanding them, and 'perspicacity', which is demonstrated by intuition, 'reading between the lines' and understanding the environment.

Although research into what constitutes wisdom is not strongly developed, we can see here some of the qualities that distinguish wise acts of leadership and management. We see, for example, that cognition must include the emotional, that knowing the world as it really is – i.e. inter-related, subject to constant change, and inherently ambiguous – is fundamental, and that wise people use intuition and the ability to 'read between the lines'. Wise people also know themselves and understand how and why others think, speak and act in certain ways. I am aware, though, that these are still at the descriptive level – another checklist. My hope is that the rest of this book will supply some answers to how to 'act wisely', by promoting thinking and adding new frames for perception. If, as de Bono says, wisdom is in perception, the ability to act wisely should then follow naturally.

Key points

1 The mind can be our servant, but can also be our master. For good leadership, we need effective thinking.
2 Thinking is more than IQ, and has many forms.
3 The better our understanding of ourselves, of others, of groups, and of how organisations work, the better we are prepared to exercise effective leadership.

4 Our thinking is strongly influenced by our mental models of reality, which lead to meanings that frame our perceptions.
5 Paradigms are large frameworks that are widely shared. Management paradigms are widely shared assumptions about the way organisations work and how they are best led.
6 A new paradigm of creativity is needed in our schools.
7 Double–loop learning is the way we change our mental models.
8 Wisdom is a quality of judgement that goes beyond general intelligence, and is very bound up with accurate perception and awareness.

Further reading

Senge's *The Fifth Discipline* looks at mental models as one of the disciplines, and there is follow-up for schools in *Schools that Learn*, again by Senge, with others. This book contains useful practical ideas.

Most Neuro Linguistic Programming books are useful for understanding filters on our thinking. Of these, Sue Knight's *NLP at Work* is very accessible.

For further work on emotional intelligence, Goleman's books stand out. However, useful practical steps in applying emotional intelligence can be found in Merlevede *et al.*

The source book for paradigms is Kuhn's *The Structure of Scientific Revolutions*, and there are various management books that refer to them.

Guy Claxton's *Wise Up* and *Hare Brain, Tortoise Mind* explore ways of thinking in a very accessible way. Sternberg's *Wisdom: Its Nature, Origins and Development* is a series of research essays on aspects of wisdom. Edward de Bono's *Textbook of Wisdom* is a useful and relatively easy read.

For full details, see the bibliography.

Chapter 2

The illusion of rationality

Jean drove to work that morning with a mixture of elation and trepidation. It was the first day of her first headship in a primary school, and she was full of ideas about what she should do, how the staff would respond to her and so on. She had decided to involve staff in decision making, as the head in her previous school did, since it had always worked there, and the atmosphere and culture were very good. Besides, it made sense, since people liked to be consulted and to own the vision. So she wanted the staff 'to have a team approach . . . to talk about things openly, to be involved in management decisions . . . to feel valued and that they had an important part to play'.

What she met was very different from the picture she had painted in her mind. At the first staff meeting, 'people weren't prepared to talk' and this continued into future meetings, where 'some staff would just look at the floor' and 'some meetings would be just me delivering a monologue with the deputy head chipping in'. Jean came to feel that staff 'regarded me with suspicion' and thought she had some hidden agenda, and wouldn't say what they thought. This proved very difficult as Jean tried to conduct an audit of where the school was, because people were not willing to speak to say what the school's strengths and weaknesses were. She also found there was a 'great mistrust' and people didn't want her in their classrooms when she offered to support special needs children. Indeed, they didn't welcome each other into their classrooms. The 'doors were very firmly shut'.

So what was happening here? It certainly did not seem like rational, logical behaviour. First of all, Jean found that the previous head, though staff had had a good relationship with him, had been very dictatorial and had been in post for a long time. There had been no joint decision making, and staff had come to accept that decisions were the head's job. This extended to parents, too, in that the head kept parents at a distance, and staff consequently had 'this great mistrust of parents'. For this reason, Jean felt it unwise to start to audit the school via parents' perceptions at this stage. Jean decided she couldn't tackle the issues and audit as a whole staff, and would work individually on individual issues.

It was this strategy that finally led her to a deeper realisation of what was happening. The breakthrough came when she formed a parents' association. She was really excited about it, but then the staff en bloc said they weren't prepared to support any of the events. She felt 'sort of perturbed' about the parents being so keen to help, and the staff not. No staff turned up for the first event, a jumble sale. Two came to the next, a disco, where Jean had believed more would come 'because of the children'. It was then that more of the truth came out. Other staff came to her privately, feeling guilty they had not attended but saying that if they had, they would have been betraying the staff as a whole, and they were having 'a bit of pressure' put upon them. They promised to come to the next event because they didn't feel it was 'fair'. She realised that one manipulative member of staff had been influencing the whole staff. From then on, a more positive culture began to emerge.

So what does this story tell us about management? It certainly shows us that getting things done in management is not such a rational process as we might like to think. The rational process is one that is dear to our Western mental models, and to find that things are not working according to such models can cause us conflicting emotions. As the chapter progresses, we will look at some of the threats to rationality shown in this passage, but first it may be useful to look at what we mean by 'rationality'.

Rationality

According to the *Concise Oxford Dictionary* a 'rational' process is one 'of or based on reasoning or reason', or one that is 'sensible, sane'. In its turn, reason is described as 'the intellectual faculty by which conclusions are drawn from premises', though it has several more colloquial uses. We can see, then, that reason and the formal process of logic come from the same source, and can be traced back to our Greek heritage. Thus when we say 'it stands to reason', we mean it is evident, or logical. Of course, when we use the idea in everyday life, we do not necessarily go through the process of premises and conclusions, but we do like to see that one thing follows logically from another.

Stacey (1996) sees three common meanings of rationality in the practice of management. First, it can mean sensible, or reasonable in the circumstances. It is behaviour that is judged to be capable of bringing about the intended outcomes. Second, as above, it can mean behaving on the basis of propositions that can be consciously reasoned about, rather than, for example, acting according to beliefs, emotions or customs. Third, it can mean the process of what Stacey refers to as technical rationality, which is a method of decision making that involves setting clear objectives, gathering facts, generating options and choosing one that approximately satisfies the objective. The second and third of these are particularly relevant to the discussion here – that is, 'reasoning' without considering beliefs and values,

and the idea that we can rationally calculate the most efficient path to get from A to B.

Limits to rationality

In Stacey's definitions we saw that beliefs, customs and emotions seemed, by implication, not to feature in a rational approach, and yet clearly people are emotional creatures, and since emotion directs much in our lives, it would be wrong to dismiss it as a force. It can also inspire us, where rationality could lead to a lack of inspiration and imagination. Certainly in the episode with which this chapter started, emotions, customs and beliefs, as well as political activity that includes them all, were the real forces acting, rather than rationality, and it was emotion and belief that overcame the problem, when staff started feeling guilty.

At a more academic level, a blow was dealt to beliefs in the power of logic when, in 1931, Kurt Gödel wrote an article about the limits of mathematical logic. He wrote the article in direct reference to Whitehead and Russell's *Principia Mathematica* (1910), which was meant to deduce all mathematical theory from laws of logic, and it showed the limits to mathematical logic, where self-reference causes problems, as in the famous 'liar's paradox', and that truths exist which we cannot prove mathematically or logically. That is, in simple terms, there are limits to the use of logic. However, as Nørretranders (1998) points out, this points only to the impotence of logic, not to that of man. Insight reaches deeper into the mind than logic ever can.

In his book *Wise Up*, Guy Claxton (1999) considers the limits of the reasoning process. Although it might be useful, he says, people are not very good at it. This is because very human processes intervene, and reasoning is often jeopardised by, for example, our desire to be right, which causes us to be 'selective' about our evidence in order to confirm what we believe to be, or would like to be, true, or 'rationalising' events to fit our picture of them. According to Nelson-Jones (1996a) there's an old story that goes around the psychiatric fraternity about a man who keeps visiting his psychiatrist because he believes he is dead. No matter what approach the psychiatrist takes, he cannot shake this belief. Every time the man arrives at his surgery, he asserts that he is dead. In desperation, the psychiatrist decides to resort to unassailable reasoning. He asks the man, 'Can dead men bleed?' to which the patient replies, 'Of course they can't. It stands to reason, doesn't it?' whereupon the psychiatrist grabs a scalpel and slashes the patient's finger. Blood oozes out of the wound. 'Now what do you say?' asks the psychiatrist. 'Blimey, Doc. Who'd have believed it? Dead men do bleed!' replied the patient.

This is not meant to give the impression that there is no place for rationality in our management of schools. It is to point out that there are, as Gödel saw, limits to what rationality alone can accomplish, and that there is a wider cognitive capacity that needs to be brought to the enterprise of

managing schools. Something of a flavour of this can be got from a story of a study of men who back horses. Ken Richardson (1999) quotes a study by Ceci and Liker in 1986 that examined the way skilled 'punters' handicapped horses. They found that they used a very cognitively sophisticated method, and not intuition or guesswork. In fact, they combined information from as many as seven variables (weight, distance, etc.) all at the same time. The combinations often contained non-linearities where increased effects of one variable on another would be taken into account. This sophisticated thinking they found was unrelated to IQ, which led the researchers to conclude that whatever IQ measured, it was not cognitively complex reasoning. Real situations involve a complexity of reasoning not found in IQ tests. In so far as such tests are supposed to correlate with reasoning ability, the complexities of the real world involve something more.

People's mental models, or 'logic bubbles' as de Bono calls them, are individual, and determine for them what is logical. People behave logically within their own mental models, in which emotion, belief, ideology and many other factors are in action. For this reason, there is no 'objective' rationality we can call upon (and note how easy it is to use the word 'reason!'). However, within most mental models, there is a belief in objective reasoning, and a conventional wisdom that has become an unconscious assumption about the way school organisations should be run.

Management paradigms, with all their accompanying taken-for-granted assumptions, have largely followed principles derived from the natural sciences. At the turn of the twentieth century, 'scientific' management was very much the theory in use, based as it was on aspects of Newtonian science and the scientific method as expressed in positivism, the philosophy of which stressed a rational approach. This way of thinking about organisations was very appealing to many managers, and in particular to management gurus, and is still probably at the root of much of current thinking.

The scientific approach

To understand the appeal of science to management theory we should go back in time to when the outcomes of the Newtonian revolution in science started to become apparent, especially in the industrial revolution. The evident successes led to the very strong belief that soon science would explain everything in the universe. In the eighteenth century, one mathematician, Laplace, even wrote that if we knew the present position of all things and all the forces of nature, then nothing would be uncertain. The feeling was that the world was predictable and controllable through science. The metaphor was that of the world as a machine, and this metaphor was transposed into the world of organisations, with all its assumptions of control and predictability, using a rational, analytical approach. Here are some of the key ideas in this thinking, and how we see them now in our school management.

Classical science

Kuhn (1962) argued that each paradigm grows to have its own unquestioned assumptions against which things are worked out and which define the terms of the debate. Capra (1996) suggests that there is currently a crisis of perception, deriving from the fact that 'most of us, and especially our large institutions, subscribe to the concepts of an outdated world view, a perception of reality inadequate for dealing with our over-populated, globally interconnected world' (p. 4).

Many of these 'outdated' taken for granted assumptions which inform our perceptions and underlie our thinking processes derive especially from the ideas of Socrates, Plato and Aristotle (de Bono 1994), and of Descartes and Newton. Newtonian science dominated the old worldview, providing a framework of thought for economics, politics, psychology, sociology and science (Marshall and Zohar 1997). Such thought was driven by several central principles, all of which can be seen in the current context of educational management, where there is reason to believe that many of the management demands being made on headteachers today are founded on such assumptions about the way the world operates. The following account of these is based on Marshall and Zohar (1997), Capra (1996) and de Bono (1994).

Principles of reductionism reflected a belief that any whole could be understood by being reduced to its constituent parts, which could then be examined in isolation. The results of this thinking are to be seen in Western medicine and education, where in one case the body and in the other the body of knowledge are fragmented into constituent pieces and where analytic thinking seeks to understand the whole through the properties of its parts. Atomism, deriving from ancient Greek thought, bolstered by Newtonian science, led to a model of relationships based on conflict and confrontation, the view that people, governments and companies are separate units, and that each can act most successfully in pursuit of isolated self-interest. Deriving from this, the idea of free market economics can be seen to have affected schools significantly in the last decade, based on the idea that competition will produce results.

Similarly, atomism and reductionism led to the cult of the expert, who was very knowledgeable in a small area, but generally unaware of the whole. This has been the norm in English secondary schools, and can now be seen to be influencing primary schools, where there is a movement from a holistic to a fragmented curriculum model as National Curriculum subjects, the literacy hour and the numeracy hour dictate the approach (although at the time of writing there are strong signs that this is now changing). Atomism also alienated the individual from the situation or community, looking at the individual in discrete reductionist roles, which extended to work roles where the individual was seen as a 'factor of production' – an objectified unit isolated from the social and spiritual self, an area which the concern of some for learning communities addresses (Sergiovanni 1996). Atomism can

be seen to be at work in business organisations and schools, where work is broken down into business functions, organisation charts and lists of managerial competencies.

Another effect of reductionism was that reality was structured in a hierarchical order of ever decreasing units. Contemporary examples of this thinking, now being questioned, are the boundaries, roles and lines of authority in organisations. Since 1988, the need for clear and precise job descriptions for school staff has been stressed as a result of such thinking.

A cornerstone of Newtonian physics, very much derived from the reductionist method, was the idea of scientific objectivity, where it was assumed that a detached observer could stand apart from that which was being observed. Nature became something entirely detached and objective. Thus the empirical method became the standard way of knowing, where ultimately reality could be observed by getting to the foundational essence of things, a foundation that existed objectively, and operated according to fixed laws. This assumption, built into the mental models of policy-makers, and of teachers and heads, underlies the constant search for the best teaching or management methods, and the stress on observing 'best practice', all of which suggest an objective de-contextualised ideal. It also implies that a head-teacher can objectively and rationally act on the school as if outside it.

The laws derived from Newton's concepts of mass, force and motion were deterministic. Thus laws of cause and effect assured certainty and predictability. This led to a mechanistic view of reality: the world was a machine, with fixed working parts and determined laws of interaction. In this world there was little scope for flexibility, where 'b' always followed 'a', and thus where change was linear and predictable. The same kind of thinking informs the assumptions of determinism in current school management planning processes (Hargreaves and Hopkins 1991) and target setting (DfEE 1996, 1997), where a future objective is set, and steps decided to reach it.

A further manifestation of the assumptions behind Newtonian science lay in adversarial thinking. There could only be one reality at a time, one way of looking at things. Things were either true or false, good or bad. de Bono traces the line of such thinking back to what he calls the 'gang of three' – Socrates, Plato and Aristotle – a system where we set up either/or choices and opposites in order to force a judgement choice in order to 'discover' the truth. The key mental activities are to choose between opposites: is/is not, true/false, fits/does not fit, proved/not proved and so on. Kosko (1993), talking about 'fuzzy logic', makes the same point, that Aristotelian logic posits either A or not-A. Instead, the world is really full of contradictions, where something may be A and not-A at the same time. That is, things are multivalent, rather than bi-valent, having vague boundaries with their opposites and happening to some degree. As the world of school management becomes ever more paradoxical and filled with dilemmas, it is ever more difficult to frame problems in terms of the old adversarial thinking. Such thinking clearly led to the

philosophy of logical positivism, which stressed objectivity, true or false, and scientific testing based on observable behaviours. Such assumptions clearly underlie the current philosophy of testing in schools.

Zohar and Marshall (1994) tell us, however, that although strict determinist laws still apply within a narrow spectrum of physical reality, in science itself the mechanistic approach has long since had its day. It seems that science has moved on in its understanding of reality, whilst our worldview is still largely based on Newtonian science. If this is the case with education policy-makers, then there are important implications for school management. Southworth (1999), for example, has suggested that educational policy now permeates the common-sense understanding and intuition of heads. In other words, heads are unconsciously adopting the mental models that form the basic assumptions on which policy is based. If such models are faithful to the reality of school management, then there is no problem, and it is not the purpose here to suggest that old-paradigm thinking is defunct, but rather to suggest that it needs supplementing and using more judiciously to better reflect reality. Kuhn (1962) suggested that when faced with a developing paradigm change, there was a natural but unsuccessful tendency to revert to tried and tested models from the old paradigm. In many ways, this has been happening in educational policy, and it will be argued here that such models are insufficient to address the reality that faces school leaders.

The rational approach to school development

The key technique for school improvement is the school development, or school improvement, plan (Hargreaves and Hopkins 1991). It is a rational planning model, based on a logical sequence of actions. First, performance evidence is analysed, and from it priorities for development are derived, for which some kind of target is set, and desired performance criteria established. A list of detailed, linear action steps is devised for each target, and then actions are taken. These actions are monitored, and at the end of the period, results are evaluated, and may then feed into a new plan.

In 1998, OfSTED reported that 'High quality development plans involve wide consultation with staff and governors, carefully chosen and prioritised objectives, a realistic number of achievable targets, and a mechanism that enables progress in meeting the targets to be monitored.' A common weakness was that school plans did not build sufficiently on evaluation – that is, the plan should reflect the analysed deficiencies of the school.

The logic of the rational planning approach is very seductive, and is indeed very effective and efficient in some ways. It is effective when it is very clear what needs to be implemented – for example, a government initiative, a process seen in another school or the development of an aspect of the school's work that is unsatisfactory and tactics for improving it are clear. Even so, unexpected changes within the school or outside it can throw plans off track.

A greater problem is that of creativity and innovation. The rational planning model tends towards single–loop thinking. Problems and developments are seen in terms of the old mental models, producing 'more of the same', but more effectively and efficiently perhaps, as we will see later. The process of rational planning implies that innovation is the result of a conscious and purposeful search. As Fonseca (2002) points out, this means that the innovation must contribute to a previously identified strategy, and correspond to a previously identified need. Thus people must have a clear idea of the innovation – the product – before creating it. It also implies knowledge of future needs and detection in advance of future changes that will be needed. Again, this is useful for known deficiencies, but less so as a response to changing circumstances. Genuine creativity is much messier and less controlled than this, is often sparked by chance happenings, rarely occurs 'to order' and comes from autonomous individuals in the school, often through trial and error. If the next stage of improvement is to rely on schools and teachers being creative to produce innovation bottom-up, then an over-reliance on rational planning could be a problem.

The visionary approach

Fonseca sees a second standard approach to innovation that revolves around the notion of visionary leaders developing cultures in the organisation that are creative and based on shared values. Here innovation is seen as a process that contains too much uncertainty and ambiguity for it to be a planned process, and because innovations cause disputes through people's conflicting perceptions of them, they can become a somewhat messy and unpredictable political process. To avoid the tendencies of those who feel threatened by it to oppose any innovation, such theorists advocate that we should establish a social system that stresses trust and faith in each other rather than rational rules, and visionary leadership with a shared culture rather than rationally designed planning systems. Leaders then, establish good conditions, and people in the organisation, because they have shared values, can be relied upon to act in a way that avoids conflict and is in line with the vision. Such leadership is the domain of charismatic, transformational leaders.

Both approaches are currently advocated in school management: the rational planning process and the focus on vision and values run in parallel. Fonseca criticises both approaches in terms of their potential to create true innovation. The first approach involves 'environmental scanning' and detecting necessary changes in advance (in itself problematic), and then being able to create rapid change in response. The second, based on values and vision, really asks people to be innovative, but only in line with the stated vision and values. Further, there is a danger of over-reliance on the visionary leader. Fullan (2001) has pointed to the problem that such

dependence can actually leave the school unable to sustain its own impetus once such a leader moves on. That is to say, the school's creativity has depended on one person.

I believe there is something in these criticisms, but that they may be exaggerated. Both approaches can be useful, and have proved themselves in schools. More to the point, perhaps, is that there are different kinds of innovation. For example, to introduce the key stage 3 strategy (a recent strategy introduced nationally into secondary schools) into a school is innovative for that school, but since it has already been centrally constructed, an approach through rational school development planning would seem sensible. Similarly, in schools which have been inspected and found to be failing, the clarity of vision and values a good leader can bring to the school or department can be a very effective springboard for new and innovative work in the school, though based on what is expected and has done well in other schools. However, perhaps the most important point is that these perspectives do not actually lead us to see any more clearly how innovations and creative behaviour actually occur in an organisation. From this perspective, the process of innovation is much less rational, and filled with elements of chance and trial and error. The rational systems described here emphasise efficiency and leave no room for chance events or for misunderstandings.

The question of creativity within the management of the school is a theme to which we will refer throughout the book. At this point, though, I would like to look at some experiences of headteachers that suggest that you need a wider mindset than that of classical science and rationality if you are to run a school successfully.

The experience of school management

I have drawn the following sections from my own research (Raynor 2000). They include comments from several heads and some school inspectors, and draw attention to some of the ways in which their perceptions of practice deviate from a purely rational approach.

People

Jean's story, with which the chapter begins, showed how our 'rational' assumptions about managing people can so easily be met with much less logical patterns of behaviour. We saw in Chapter 1 that we should accept that people are behaving logically given their own 'logic bubbles' but that this behaviour can often seem irrational to us as managers. And to understand where this 'logical' behaviour is coming from, we would need to understand a very complex configuration of forces within the person. This is a matter of their emotions, beliefs and motivation, which drive their behaviour but are not rational in the sense of being reasoned out. This

complexity is further increased when the dynamics of staff interaction are taken into account.

The passage shows the kind of psychological defence systems people can exhibit in the face of perceived threat, in this case from a new head and potentially new order. We do not know the motivation of the 'ring-leader' in the episode, but quite probably anxiety was a factor, perhaps unconsciously held. Stacey (1996) describes fully how important such unconscious group behaviour can be and how it can lead to infantile behaviour, threats to power positions and organisational defence routines – all of which have powerful effects on any organisational strategy. Further, the episode shows the importance and power of the shadow system (Stacey 1996) – the informal self-organised power and communication system that shadows the formal organisational system, and in which covert political processes take place.

Management practice

It is also clear that much of the work of school managers does not adhere to, and cannot be understood in terms of, the classical science paradigm. For example, to look at the manager's role in a reductionist way and with a linear view of cause and effect fails to fully comprehend the way much of what they do has interconnections and needs to be seen holistically. One head said that the difference between being a head and being a teacher was that as a head you needed to think on a global level, as most senior managers in a school would agree. This made him recognise 'what a complex organisation a school is, containing incredible diversity'. He used the image of a light in a ballroom to describe this diversity: 'It's so multi-faceted, you know. It's like one of those ballroom things that spin round and . . . it catches the light, and that chink of light alights on a child at a point in time doing something no other child will ever do in the future.' Within this system, he says, 'Whatever you say or do in one place will have a knock-on effect in another.' This head clearly sees the great individual variety in the school, but also the way that things are interconnected.

Inspectors told me about the way single actions could reverberate throughout the organisation and beyond. Two such examples were given of the results of the exclusion of a pupil, which can be 'just a giant thing, and you think you're resolving something simple and technical . . . [but] when it bursts into flames all around you . . . you realise you can't just solve it with a simple technical solution' (Inspector). The systemic results of this action had affected staff relations, staff–head relations, governors, parents and community. Such systemic repercussions are not always negative, as one new head who had excluded a child, causing a 'huge impact', found. An inspector described the result of the exclusion, in a Catholic school, as 'an immediate distancing from the governing body' which she found 'difficult to cope with'. But at the same time, 'it reduced the vandalism overnight' and gained the respect of the community.

Another new head in an aided school understood from her job description that she did not have to consult staff, only inform them.

> So she informed. She told them, 'We're changing the length of the school day'. And of course, the world came clattering round her ears. She said, 'Well, I hadn't realised there are things that I can do, but shouldn't do. . . . It might be within my power, but it's not the way to get it done.' (Inspector)

This simple error is indicative of three things. First, that the structure in an organisation extends beyond the official reporting relationships, and that 'unofficial' rules may carry as much weight in terms of outputs or results as do the official ones. Second, it shows that there is an important interrelationship between the formal and informal structures. Third, it shows the need for the head to be able to think holistically, an aspect of wisdom.

These accounts suggest that a holistic view is something more than 'helicopter' vision. Heads have to be aware of the dynamics within the view. Mintzberg (1996) doubts if anyone can get the true 'big picture' by just seeing from above, and says, 'strategists don't understand much about forests if they stay in helicopters' (p. 80). Whilst looking at parts in isolation can, of course, be useful, it is not enough to understand the complex of dynamics of a school.

Strategic thinking

The predictability implied by the mechanistic model can also be a problem. The school is not an isolated system and is very dependent on other systems that can produce forces that can add to unpredictability. Here one head talks about it:

> I find strategic planning very difficult. The reason is I would like to think that it was actually possible to start at position A and finish up at position B . . . you plan along a certain line, and you are deflected from that by forces which are out of your control . . . you are not always in charge. There are other forces at work, like the external agencies, like unforeseen circumstances, like a member of staff being away ill suddenly, or having to go home in the middle of a day, or long-term absence suddenly thrust upon you. You're forced along a certain path by the funding, or lack of it, the things that are governed by that. You are pulled away from the kinds of plans you have set up by changes in direction from the LEA – sudden changes of direction, sudden inexplicable changes of direction sometimes. So there are external forces at work that make that very hard. There are also internal things at work, you know, things in your own mind, which make you say, 'That was right last term, that plan, but this term, I think the school has changed. We have to move in a different direction.'

He sees that change and development are non-linear processes, and are not able to be pre-determined or fully controlled. External and internal environmental forces constantly deflect events, and change priorities. There is also the important aspect that the head's perception of the school's needs has changed, because the actual effects of earlier strategies have changed the school. I believe this is a very important point. As our plans are put into action, and the school changes because of them, those changes could produce a situation of which we were unaware when we formulated the plans. In other words, we are at a new starting point, which may make redundant those future plans that are still to be carried out. This is a constantly evolving process, where what just happened determines what happens next.

Other effects on strategy occur in a chance, unplanned way. Heads speak of the unexpected openings produced by early retirements, or promotions, especially of people who have resisted new strategies. A head of a secondary school explained his worry and anger at the new, substantial amounts of money being allocated by central government to boost senior leadership teams. This was being selectively distributed to Education Action Zones and to under-performing schools. His school would get none. His worry was that through no action of his own, he would not easily be able to offer the same level of salary as these other schools, and would inevitably lose key staff and find it hard to replace them. Other chance happenings mean that opportunism is a necessary force in strategic thinking.

Ambiguity and paradox

As opposed to the idea of adversarial thinking, school managers operate in a climate of ambiguity and paradox, where simple 'either this or that' prescriptions do not work. The ambiguities and paradoxes show up in many aspects of the manager's work. They need to have the right balance between the needs of people and the needs of the task, but external pressures for results have produced feelings of conflict within their roles. Almost without exception, the heads in my study felt the most important part of their role was to work as facilitators who enabled and empowered people. However, the effects of increasing accountability were promoting in some a more directive and 'hard-edged' approach, with great stress on monitoring the poor performer, perhaps as much for their own survival as the education of their pupils. At the same time, this context was pushing heads into a great concern about the pressures teachers are under, leading one to say he now feels he must 'cherish' staff more than ever, and another to keep her concerns about a forthcoming OfSTED inspection to herself so as not to demoralise an overworked staff. The significant growth of the monitoring function has also increased the ambiguities and paradoxes above. Here's how one head described this tension:

> I think we are regularly looking at what the school is like through someone else's eyes. I think we are looking at monitoring and evaluating

> what we do and at the back of our mind all the time is the whole business of inspection . . . If you walk past a lesson or you sit in a classroom you make notes as if you were an inspector. And it is quite debilitating in a way, because it stops you looking at things through your own eyes. You're continually watching your back.

Other aspects of accountability produce role ambiguity for the head. This is particularly evident in some cases of governor relationships. Whilst all heads have found that servicing governing bodies takes up a large amount of time – producing information documents, attending meetings and devising ways to draw and involve the governors – at the same time, some see the governors as installed by government as an additional layer of inspection. Thus one head, finding that the governors allowed him a free rein in running the school, worked hard to involve them, which demanded a lot of time, attending an average of one meeting a week. Despite all this, he was rudely reminded of the accountability relationship as OfSTED approached, when he was 'told in no uncertain terms that I should have thirteen policies ready for September'.

Culture

These heads saw the development of an appropriate school culture as a crucial means to ensuring that everyone was pulling in the same direction. Many of their professed practices in this respect mirrored the literature (e.g. Schein 1985), with artefacts and rituals that epitomised the desired culture – for example, homework clubs, school mottoes and assemblies that stressed the school's shared values. As one head observed, expectations broadcast in this way become 'walled in' to the culture.

Winning alignment is the key factor but although artefacts, systems, procedures and so on will contribute to this, the culture cannot be forced: rather it emerges. It is

> not something you plan for at the beginning of eight years' worth of headship. You don't say at the beginning, 'I want people to come in and say, "Oh look, aren't the staff together?" It's something you chip away at like a stone. Over time it emerges. Nobody actually writes it down. (Headteacher)

Thus culture is an emergent, self-organising phenomenon that takes time. These examples pose the question of how much a head can 'determine' school culture, which was a key issue for new heads, for experienced heads going into new schools, and where two schools were merging. For them, culture was a key aspect of contingency and complexity, as they arrived in a new school where the culture was in fact working against alignment.

Further, it is not only the head who somehow 'directs' culture from above. The head's may be the strongest voice, but others have influence too.

In summary, we can see from these few examples that the view of rationality based on Newtonian science is insufficient as a guide through the real world of management practice. Managers have to fulfil multiple and ambiguous roles, and maintain a tension between them rather than choose one or another. Such roles are not simply determined by their own organisation but are strongly influenced by outside factors such as government policy. They have to be aware of systemic relationships, both inside and outside the school, an interconnectedness of events that simple cause and effect cannot describe. The 'scientific method' is lacking simply because in such open systems the independent variables are *inter*dependent and cannot be controlled.

A new paradigm

So far in this chapter we have seen how influential the science of Newton and the ideas of rationality have been, and continue to be, in the way we manage schools. We have also seen that although such models can be and are effective in many ways, there are also many aspects of the management experience where they are less useful, either for understanding or for driving management. The world of education is much more turbulent in recent years, as the pace of change, the demands put upon the system and the interconnectedness of the world perspective act together to demand constant change and development. Schools need to be able to act nimbly and quickly to generate this level of change. In recent years much of this change has been driven by central government, but I believe this is unsustainable because of the long lead times involved in massive initiatives, and, as I shall argue later, because individual schools need to react to their own local context. Central reform has had its apparent successes, but as the government targets fail to be met for three successive years and the chief inspector of schools declares the government's improvement plans to have stalled, a new approach to innovation is needed.

Second, we have reminded ourselves that organisations are people. Imagine a school with all its filing cabinets, policies, school development plans, budget statements, self-evaluation forms, schemes of work and lesson plans, but no staff or pupils – perhaps only a caretaker. It would be a building, but not a school organisation. Without the people, nothing happens. And as we have seen, people as individuals are complex systems: in groups, their behaviour can be even more complex. For both these reasons, the machine model seems woefully inadequate to describe either innovative behaviour or the effective management of people. Complexity science is now starting to be seen as a paradigm for management processes. Many are now turning to this developing science, and to a lesser extent quantum mechanics, to help to give us greater understanding of what happens in organisations.

In particular, recent discoveries about living systems have led to the concept of 'complex adaptive systems', which are being used not only to describe natural aspects of the living world, such as the human immune system, termite colonies and ecologies such as rainforests, but also to describe organisations and give insights into how to run them. Some regard this usage as analogy (e.g. Morgan 1997); others claim that the way complex adaptive systems work is actually how organisations work (e.g. Pascale *et al.* 2000)

In order to orientate the reader to some of the management ideas in this book, here are some key concepts of the science of complexity. These are by no means exhaustive, but should provide enough background to make later aspects of the book comprehensible.

Quantum theory

I think it would be useful to consider just two aspects of quantum theory. First is the discovery that basic particles have the potential to behave both as waves and as particles. Which property they exhibit depends on the experimental situation, i.e. the environment at the time. It follows that atomic objects have no intrinsic properties independent of their environment (Marshall and Zohar 1997).

Second, where classical physics reduces all complex things to a few simple components, stressing their objective reality, quantum physics shows that new properties emerge when simple things combine or relate. Underlying quantum reality is the wavelike spread of possibilities, and events often happen without apparent cause, unlike the common-sense view of causality as a chain of events:

> The behaviour of any part is determined by its nonlocal connections to the whole, and since we do not know these connections precisely, we have to replace the narrow classical notion of cause and effect by the wider concept of statistical causality. The laws of atomic physics are statistical laws, according to which the probabilities for atomic events are determined by the dynamics of the whole system.
>
> (Capra 1982: 76)

These are not, however, probabilities of things, but probabilities of interconnections: as isolated entities, sub-atomic particles have no meaning.

If such concepts have relevance for school management, leadership can be seen as context dependent, the head being at the centre of a mass of interconnections. This mass of interconnections, according to Capra, means we cannot decompose the world into independently existing smallest units. Hence, a head cannot just operate one competency – actions will be dependent on all the others at the same time, and on their relationship to the context. Further, the dynamics of the whole school organisation will determine the probabilities of certain behaviours of teachers and pupils. Thus the

values, systems and structure operating in the school will influence these behaviours: for example, a mechanistic approach will increase the probability of mechanistic thinking by teachers. However, since people are part of more than one system – for example the family, the school and the community – the complexity is increased.

Causality is therefore complex and individual events do not always *have* a well-defined cause, and therefore probability must replace prediction. This is because events are not necessarily brought about by local causes, but by distant ones. In trying to predict the responses of people in an organisation, for example, it can be seen that any individual response to any situation may be a result of factors deep in that person's history, often not even apparent to themselves.

Complex adaptive systems

Complex adaptive systems tend to contain a large number of elements that interact with each other. This interaction is dynamic – that is, it causes the system to change over time. Any element (in a school, this is probably a person, of course) influences and is influenced by other elements – there is a great deal of interconnection. The interactions, because of the massive interconnections, can exhibit non-linearity – that is, some small causes can have very big results. They are systems that are open to their environment, with which they interact and to which they adapt. Because of this there is a constant flow of energy through the system that keeps it energised, or 'far from equilibrium', and ensures its survival. If it became too static – attained equilibrium – it would no longer adapt to its surroundings and would die.

Each element of the system is ignorant of the behaviour of the system as a whole, but all the interactions of elements self-organise to form emergent patterns of whole-system behaviour. Because outcomes are emergent and dynamic, they can be unpredictable and surprising. All systems of interactions demonstrate emergent properties, just as the mind is an emergent property of thoughts. In complex adaptive systems, though, there is a dynamic adaptive factor that means that there are constantly changing emergent patterns.

Emergence

A central feature of complex adaptive systems is the process of self-organisation. This causes the spontaneous emergence of new patterns of organisation and behaviour, which arise from the interactions between the elements. In the case of organisations, these are principally the people in them. As Cilliers (1998) puts it, self-organisation can be defined as 'a property of complex systems which enables them to develop or change internal structure spontaneously and adaptively in order to cope with, or manipulate, their environment' (Cilliers 1998: 90).

The word 'spontaneously' is crucial for understanding emergence. It is the interactions between agents that lead to the emergent outcome. There is, as it were, no one in charge, organising, commanding or controlling this outcome from outside. Similarly, no one can 'know' the outcome in advance. What emerges is something new. Streatfield (2001) describes this as a 'pattern of meaning that is organising itself in the bodily interactions of people'. The earlier examples of the shadow system and school culture could be seen in this light. As you will remember, one head said that culture was something you could not direct.

Dissipative structures

Writers on complexity in organisations make frequent use of this idea, which comes particularly from the work of Prigogine and Stengers (1984). In their work, for example, a liquid is held 'far from equilibrium' by some factor in the environment, in this case heat. As more heat is applied, small fluctuations occur in the liquid and these are amplified until, at a critical temperature, the liquid system reaches a 'bifurcation point' – that is, a point where it becomes unstable and has a possibility of developing along a number of pathways. This area of instability is often called the edge of chaos, and is recognised as the place where systems are most likely to be creative. At this point, the particles of the liquid self-organise into one of the possible patterns this bifurcation can lead to. The pattern is called a dissipative environment, forming an evolving process where stable states give way to disorder, which then creates new order through the self-organising process.

We can see in schools the constant tension between keeping some stable structure but also being able to change in response to the 'heat' coming from outside in the form of new demands and new accountabilities. Steven Rose (1998) addresses a similar concept in his book *Lifelines*. Rose is a biologist who reminds us that every molecule in our bodies is replaced thousands of times during our lifetime. But despite all this change, our form persists throughout life. We can see a school as a 'persistent phenomenon'; despite changes to staff, pupils, buildings and even the head, it maintains a recognisable form as a school. The stability of such form had been seen as homeostasis – the regulation of the internal environment, like a thermostat controlling the temperature of a room. Rose says that this is misguided, and that living systems develop, mature and age, and that homeostatic points change throughout life. As he says, organisms switch their own thermostats. Because of this, he says, we should think in terms of homeo-dynamics. This encapsulates the paradox of development: that a living system has to be and to become simultaneously. I believe the same processes are at play in schools, where we have to live with the constant paradox of being stable (how often have we heard the cry for a period of stability?) and yet changing. The changing is also not simply due to a reaction to the external environment.

Rose's point about switching our own thermostats is important – in schools we can choose to develop for our own reasons.

This has been an exceptionally brief look at complexity theory, but it has, I hope, given sufficient flavour to make the remainder of the book intelligible where ideas of self-organisation are put forward.

Key points

1 Rational approaches to management may fail to take into account the effects of emotions and beliefs.
2 There are several limitations to the use of pure reason.
3 Much management, including that of education, has been based on mental models derived from logic and classical science.
4 Rational planning models are useful, but are unable to account for real creativity. Visionary approaches, too, have their problems.
5 Much of the experience of school management is a challenge to logic and rationality.
6 Thinking about leadership and management according to 'new science' may offer new perspectives.

Further reading

For a general view of complexity science, Capra's *The Web of Life* is an easy and interesting read. For the use of complexity theory in organisations, Stacey's *Strategic Management and Organisational Dynamics* (3rd edn) (2000) is a leader in the field. A much easier read, but much less detailed, is Pascale and colleagues' *Surfing the Edge of Chaos* (2000).

In applications to schools, the works of Fullan (*Change Forces* through to *Leading in a Culture of Change*) are easily readable and very perceptive. Morrison's (2002) *School Leadership and Complexity Theory* is a more difficult read and much more detailed in its complexity theory analysis, but contains a multitude of references.

Chapter 3

The illusion of control

This chapter will examine the idea of control in school organisations, and show that this is not as simple as is supposed. Whilst we have a felt need to be in control of what we are doing as managers, there are many processes we cannot fully control. As managers we are in control but not in control – a paradoxical position.

I interviewed one head shortly after she had become a new head in a primary school. Her first impression, she told me, was of a lack of control. When pressed about what she meant, she referred to the fact that as a teaching deputy, she had been able to put classroom initiatives into practice herself, and thus she was setting an example, leading from the front. She went on to say that she found it very different working through people and not being able 'to show them'. This seems to me the type of situation Streatfield (2001) describes as being 'in control' but 'not in control' at the same time. She has to be in control of what happens in school, but feels unable to be sufficiently in control of the classroom situation, and the anxiety this throws up is disturbing.

The conventional wisdom has us going through many processes that presuppose our ability to control what happens in the school, such as school development planning and other plans, monitoring and evaluating processes, as well as target setting. In effect, these set out to control purpose, outcome, process and quality. In so doing, they make the implicit assumptions that we can predict future outcomes of our actions and control them.

In Chapter 2 I introduced the idea of complex adaptive systems as a frame within which to understand what goes on in the school organisation. I also suggested that because of the influences of extensive interconnections and non-linearity, and the emergent patterns of behaviour that arise from self-organising processes, the kinds of predictability and control that our conventional wisdom demands may not in fact be possible. In this chapter we will look at what this means for organisational behaviour and management, especially in schools.

Operational control

Streatfield recounts the story of when he became a department manager in a drug company manufacturing capsules filled with pellets to stop colds. The manufacturing process was defined in detail and controlled to high quality standards, and Streatfield believed his role to be to understand the process and control the quality of the department's outputs. In this carefully planned and designed process, he expected the operators to be able to tell him precisely how these capsules were produced, but they were unclear and he therefore went to work with the operators, who guided him.

It was then that he 'began to realise how much production performance on any particular day depended upon the detailed judgements that the operators were making about each step in the manufacturing process' (p. 13) and he began to get the uncomfortable feeling that although he was 'in charge' of this process, he was not in significant control of it. Having a 'respectful relationship' with the operators was more important than specifically controlling the manufacturing process.

What Streatfield had found was that at operational level, no one really understood the process of keeping the mix of pellets consistent as they filled the capsules with them. He then goes on to describe his extensive and complicated 'scientific' approach to solving the problem, which involved many processes, until, when they were trying to remove variations in pellet size, they realised the variations were in fact essential to allow variable release patterns in the stomach. It was impossible to determine the best size for each pellet because the 'release profile was the outcome of the interaction between all the pellets as they slowly dissolved together'. In fact, there were so many interrelated factors in operation they were unable to bring any control over this process and the outputs of it.

What Streatfield had to recognise was the kind of knowing the operators had developed. It was their judgement about each step upon which the effective outcome depended – for example, they 'knew' when the pellets were just wet enough to apply powder to, and not too wet. They watched and felt and just knew.

This example of the first-hand experience of a manager seems very important to me because it shows the different kinds of control the manager assumes he or she needs. Here Streatfield feels the need to control the outcomes, especially in terms of quality, and also the processes used to achieve them. I have used this example involving the production of inanimate objects because we are using, or attempting to use, very much the same idea of controlling outcomes, quality and processes in education. If Streatfield found it difficult to control these in a manufacturing process, how much more difficult must it be in a process which involves the education of young people.

Another interesting realisation from this example is that although Streatfield, as manager, could not have full control of this process, it was in fact orderly and controlled, even without his ability to control it 'from above'. The attempt to control what occurs in the classroom has resulted in a plethora of orders from central government, innumerable school policy documents, tightly controlled schemes of work and lesson planning, and classroom monitoring in many forms. However, at the end of the day, I suspect there is a great parallel between Streatfield's capsule operatives' instinctive skilled behaviour that the planning and monitoring systems could not comprehend, and the skilled behaviour of the teacher in the classroom reacting to and leading the nuances of all variables involved in the learning behaviour exhibited by the pupils.

Streatfield goes on to identify the problem of managerial control. At its heart, there is a paradox. The manager is at one and the same time 'in control' but 'not in control', a paradox that applies to all levels of hierarchy of the organisation. This sense of paradox, and the sense of a need to be in control, give rise to anxiety, which we try to assuage by putting into place control mechanisms, and systems to ensure all are aligned to the enterprise. Above all, we need control to avoid uncertainty, because as we saw in Chapter 2, our unconscious assumptions are that the world is controllable and predictable. The next section looks at the ways we are attempting to impose that control in our schools.

The pupil–teacher interface

What happens in class? Teacher and pupils engage in communicative processes as they negotiate meaning. The teacher has to be able to deal with all the nuances that occur at this transactional level, way beyond the planning processes of central government, school, department and even his/her own lesson plan. Because the communicative transactions involve misunderstandings, alternative understandings and explanations, there is a self-organising process going on as meaning and understanding emerges for the pupils. This process means that the teacher's progress through the material cannot be linear, but instead involves constant adjustments that depend on the pupils' responses. As Sergiovanni (1996) has said, what just happened determines what happens next. Add other nuances, such as the emotional state of the children in the class, and we can see that we have a complex system of relationships and learning proceeding through the communicative interactions of the class and teacher in real time, with the teacher constantly modifying plans as they go.

Where is the locus of control here? The teacher is in control of the initial planning, probably modified from department plans, but not in control of the course of the conversation of learning. This relies on the self-organising in-class process, which the teacher clearly influences but does not completely

control. Most importantly, managers in the school cannot control this process at the operational level.

Indeed, this can be a daunting prospect for student teachers. Atkinson (2000) describes a student teacher who 'rejected the paraphernalia of planning conventions' (p. 79) but was assessed as 'outstanding' by her school-based mentors. Instead she visualised what the students had been doing in the lesson before, what their current needs were, and then 'improvised' her lesson around the resources she had prepared. In contrast, he describes very many students as 'paralysed with fear', who do not trust their own insights, intuitions and ability to improvise. Such students plan to the extreme, but generally produce uninspired learning experiences. My purpose here is not to enter into debate about what constitutes good teaching, but simply to point out that whatever planning has gone on, the operational practice will be making intuitive modifications in real time. It is this process that we cannot control, as meaning is negotiated through the interactions in class. This represents just one way, at an operational level, that middle managers have to live with the paradox of being in control (through schemes of work, termly plans and so on) but not in control. As we shall see, there are other obstacles to our control of the outcomes of and processes in our school, but first let us consider some of the processes we put in place as managers to control outcomes.

Strategic planning

Many of our attempts to control what happens are built around the rational planning model. In the last chapter we looked briefly at the use of the rational planning model for school development. I should now like to consider the idea of strategic planning in our attempts to control the future.

Fidler (2002) distinguishes between three aspects of strategy:

(a) strategy itself, which involves a strategic aim and a means to reach it;
(b) strategic planning: a plan to put strategy into practice; and
(c) strategic management: implementing strategy.

In discussing the timescale of strategies, he suggests that strategy should extend to five to ten years, but that some need to be even longer term, such as capital investment in new buildings. These decisions should be taken with an eye to what schools will be like in the future. At a shorter time scale, Fidler sees medium-term plans extending over five years, and short-term school development plans over one year. The need for strategic planning is summed up in the quote (p. 12) 'If you don't know where you are going, you will end up somewhere else.'

Fidler uses Johnson and Scholes' (1999) model of strategic analysis, strategic choice and strategic implementation, which reflects standard thinking on

the strategy process. This process involves audits, environmental scanning, Swot analysis, and culture analysis to identify future trends. Strategic choice is then based on generating options, evaluating them and choosing from amongst them, and should cover remedies for areas not being addressed satisfactorily and a 'creative, proactive element' (p. 17). The process then continues with an evaluation of the choices and implementation of the strategy.

This view of strategic planning raises several issues:

1 How well we can know the future. Even though the sections on environmental scanning are concerned with identifying trends rather than more precise knowledge, which Fidler says 'should never be expected to be a wholly accurate prediction of the future', there must be a big question about accuracy and how much we can rely on our 'hard evidence' and intuitions sufficiently to plan a strategy based upon them. In very stable environments this may be less of a problem, but in a fast-changing environment, it is a real difficulty.
2 By implication, this process suggests we are capable of controlling the future evolution of the school, or at the very least we are going to put in place the structures, systems and resources that will lead to the implementation of our strategy.
3 Fidler's use of descriptive language is significant in places. For example, he sees the planning process as 'a conveyor belt with short-term plans being completed and dropping off the end to be followed by the next short-term plan' (p. 11) and goes on to use an analogy of 'design and build' taken from engineering. These are perhaps unwitting testament to the overall mechanistic image of this process.
4 There are many examples where this approach is clearly valid and useful – for example, in recognising falling trends in pupil numbers or unsatisfactory behaviour and academic achievement levels. However, as will be suggested later, the ability to control the processes causing these states may be more problematic. Fidler also suggests that a strategy should be a way to move towards a vision of an improved future, and uses the example of the attainment of a much greater degree of self-selected learning by students. The provision of a multi-media centre, in his example, would definitely encourage this.
5 In this model, any creativity needed is by definition something that is already known. The analyses may point to a need to be creative about some aspect of our work, but here it will be because we have recognised we are not doing it well or not doing it at all when we know others are. The model does not show how true innovation or creativity arise in the organisation, or how we handle it when it does.
6 Fidler recognises issues surrounding the uncertainty of the future both outside and inside the organisation and this makes it increasingly error-

prone the further into the future we go. Fidler says that once you realise 'no-one has a perfect answer to foreseeing the future, it becomes a little more manageable' (p. 20), and that identifying broad-brush trends is realistic. These predictions have then to be regularly updated by monitoring, but plans cannot be revised too often or they 'lose their value as a secure base for planning' (p. 20). It seems to me that this presents us with a very confusing picture. Our longer-term plans are to provide a secure base for planning, and yet they refer to future trends that can be uncertain and have to be constantly monitored. At which point are we actually committed to the plans, then? One remedy for this problem of knowing the future is the concept of core competencies of the school organisation. This involves the use of successive approximations. Fidler quotes the use of ICT in schools. Whilst it may be difficult to predict which way the use of ICT will go, it seems clear that building a core competency in this area will allow ready adaptations in the future.

7 Although Fidler recognises that turbulent environments make it more difficult to predict the future, he still believes that 'reading the environment' will reduce apparent turbulence to acceptable proportions and then conventional planning can go ahead, with only a few unpredictable aspects of the environment, such as political reorganisation of the structure of schooling.

8 In practice, the strategic planning process and the school development or improvement planning processes seem in most schools to be equivalent processes, although, as Fidler points out, they should have different time spans, different levels of detail and different components. This confusion of strategic and development plans can be quite persistent. Bush and Coleman (2000), for example, indicate that the strategic plan would be for a 3- to 5-year timescale, whereas a development plan would be for 1 year. However, they then go on to describe a 4-year development plan, and then to describe 1-year action plans. This may only be a question of terminology, but it is nevertheless a confusing mixture of descriptions. Bell (2002), on the other hand, seems to equate strategic planning and school development or improvement plans. Though no timescales are given, he seems to imply the standard 1-year development plans most used in schools.

Cybernetic control

These planning systems are a development of cybernetic control systems. In the eighteenth century, when James Watt developed his 'governor', a system for controlling the inlet of steam into a boiler, he developed a new system of control. Watt's governor was in essence the precursor to central heating thermostats and other control mechanisms used in cybernetic systems. An

important conceptual breakthrough was that in such systems, the output could 'control' the input by means of this detector mechanism. In the case of Watt's governor, this served to keep the drive shaft of the engine at a steady speed. How such a control system works is shown diagrammatically in Figure 3.1. This is an example of a negative feedback system, so called because the action of the detector mechanism is to control and stabilise the input by adjusting any deviation in the output. For this reason, it is also known as balancing feedback, and applies to goal-oriented behaviour.

Why is this important to school leadership? Its importance is that this is the underlying model we are using to promote development in our schools: it is the model on which our school development or school improvement plans are based. The basic process is quite simple. We decide a particular goal, design steps to reach it and then design monitoring systems to see if we are 'on target'. If we are falling short in our desired output, then we try to employ more resources or whatever to increase the output. Most of the accepted processes that schools use for development planning will to greater or lesser extents involve the negative feedback system shown in Figure 3.2. We can see the stages in this feedback cycle in a standard school development plan. This is an aspect of systems thinking and leads us into ways in which systems effects can influence our control on events.

I have tried to show here that rational planning models as currently advocated, and by implication the various levels of planning that derive from them, present a number of problems in terms of predictability, control and creativity. Many of these problems result from forces over which there is little direct control, and we will look at some of them in the next section.

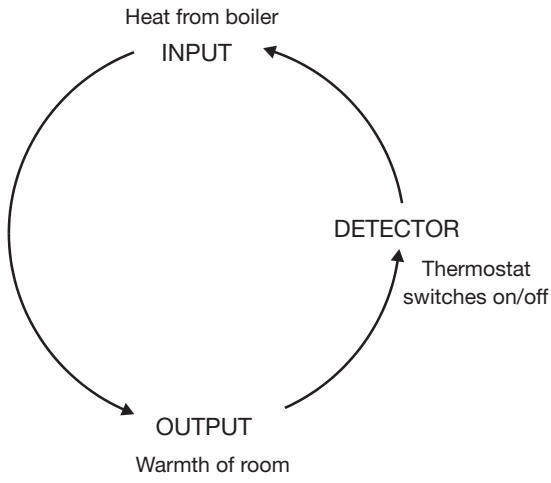

Figure 3.1 Cybernetic control systems

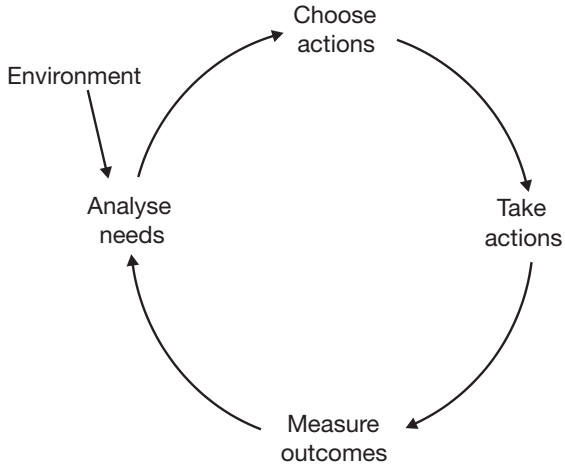

Figure 3.2 Negative feedback in school planning

Systems effects on control

At the start of this chapter, we looked at the idea of the impossibility of managers 'controlling' the actual transactions in the operative stage – in the case of schools, the teacher–pupil interface. At this level it seems there will always be some indeterminacy where teachers have to react to what is happening in real time. In this situation, meaning and understanding self-organise in the interactions between teacher and pupils. We have also looked at the role of planning approaches and visionary approaches to school development and the problem these present in terms of genuine creativity, and how they fail to actually encompass the act of creativity itself. I would like now to consider three more factors that inhibit the control we would like to be able to exercise on outcomes. These relate to factors outside the school, systems effects within the school and self-organising processes within the school.

In complex systems our actions can set up very complex patterns of feedback. Figure 3.3 shows a positive feedback loop, where the action and effect reinforce each other. The more of one there is, the more of the other there is. In this case the action produces an effect we want and so we continue the action, which increases the good effect and so on. This is a reinforcing loop. (A virtuous cycle. It is important to recognise that such a reinforcing loop could equally produce a vicious cycle if the action was producing an unwanted effect.)

We also need to recognise the power of the self-reinforcing nature of such loops, which can become explosive through the constant increases involved.

(For example, continuing to apply heat to a steam boiler without a temperature control mechanism would soon lead to an explosion.) This is why it is also called amplifying feedback, and you can see it in such things as the spread of flu, or microphone feedback when it is close to the amplifier.

Such positive loops can be very powerful, and very difficult to change. They can be beneficial, as when a school is 'on a roll', but they can also cause problems over which a school has very little or no control. A reinforcing pattern a school might welcome, for instance, could be that shown in Figure 3.4. Here, as examination results improve, so does the reputation of the school. This then attracts more 'middle-class' parents and their children to enrol at the school, which in turn continues to feed into the

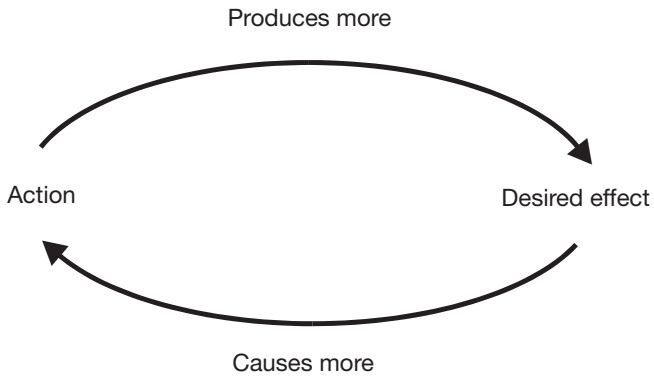

Figure 3.3 A reinforcing feedback loop

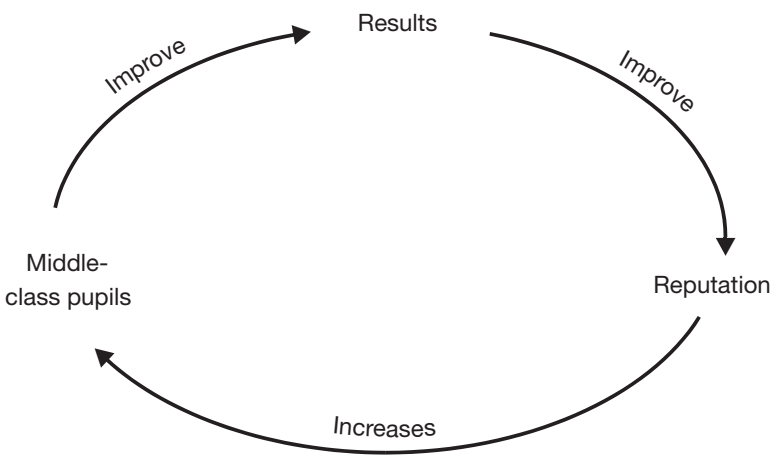

Figure 3.4 A virtuous circle

achievement of good results. This is, of course, an example of just one mechanism operating on outcomes, and I do not intend to suggest it to be the only influence on results! However, you can see that other reinforcing loops could build from this. To stop such a loop can be difficult. Other schools in the neighbourhood, for example, may find it extremely difficult to match results with those of this school and unless they can capitalise on other factors will find it hard to attract the calibre of pupil that will enable those results. Actually, what usually happens is that the resources become insufficient for the numbers of pupils wishing to come to the school, and many have to be redirected (though government keeps talking of the expansion of popular schools), thus applying an external brake on the process, usually involving much upset and political activity amongst parents who see their right of choice to be unreal.

Much more pernicious for a school is the same reinforcing feedback, but in the form of a vicious circle (Figure 3.5). Here, a poor inspection result or examination performance will cause a lowering of the reputation of the school, and in turn decrease subscription to the school. This then keeps the whole cycle moving in the same direction – even worse results, a lower reputation and lower subscription. I have also seen this vicious cycle working in terms of 'white flight'. One year an LEA changed slightly the catchment area for an all-white school to include part of an area populated by ethnic minorities. A similar process to the above occurred, and within a few years, the ethnic nature of the school had changed completely. This kind of vicious circle can be very difficult to control within the school and may rely on external intervention.

In complex systems, because there is such a web of interconnections, you can never just do one thing. As some heads have found out, there can be

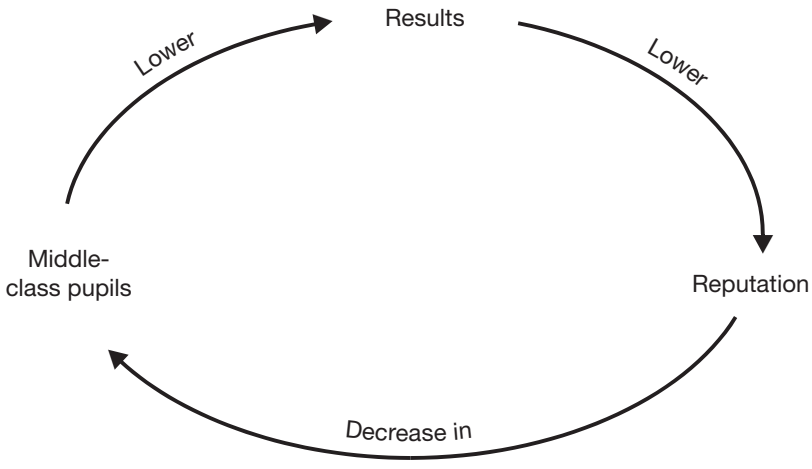

Figure 3.5 A vicious circle

many effects from a single action, and several actions can contribute to one effect, as shown in Figure 3.6. Since some of these effects can be delayed, not showing up until much later, they can remain hidden for some time as reinforcing loops build them into a more powerful force. Thus whilst a reinforcing loop is acting, other loops may also be producing unintended consequences. In complexity theory terms, these multiple effects can actually be seen as 'attractors', which draw the system towards them. Attractors are states that a system falls into: the actions being currently taken become progressively held in the route to a particular outcome. The image of a ball as it rotates around the rim of a hole in the ground, gradually gaining momentum until it comes to settle at the bottom, is often used to represent this idea. A complex nonlinear system always has the potential to have several attractors operating at the same time (Figure 3.7). We can see an example of this gradual build-up of unintended consequences in the government development of the literacy strategy in England.

The literacy strategy

The British Government introduced a policy of teaching literacy for one hour per day in English schools. After four years the 'literacy' hour – a

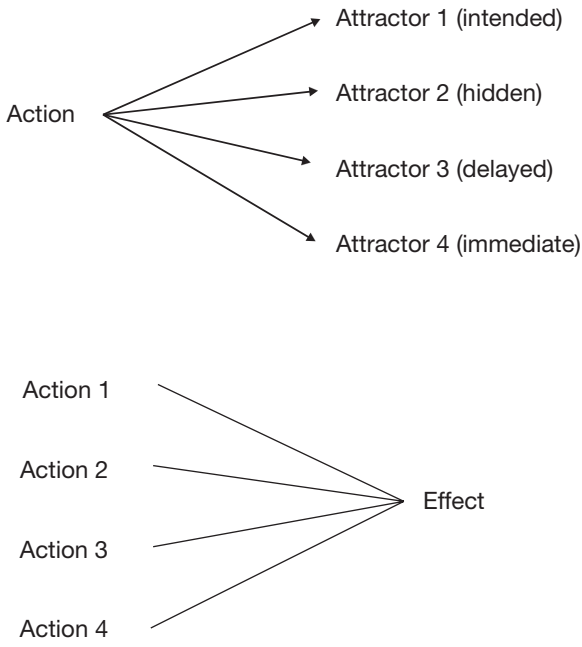

Figure 3.6 Actions, effects and attractors

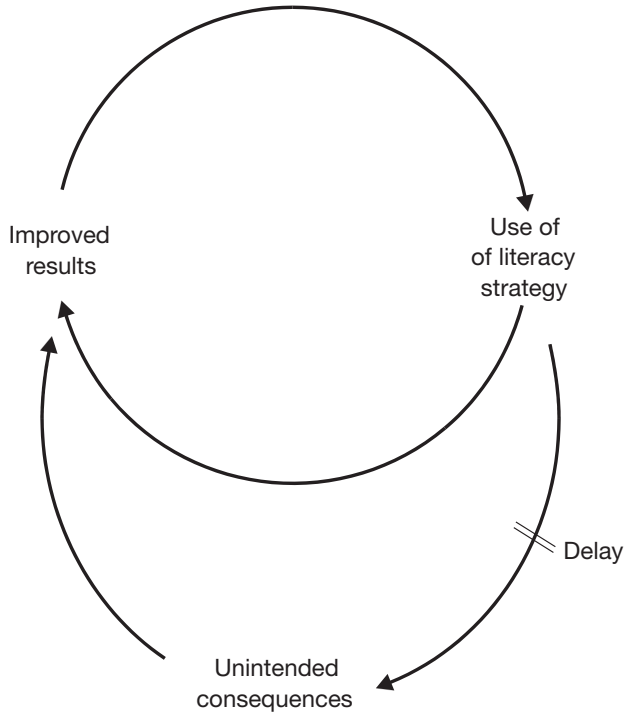

Figure 3.7 Unintended consequences

prescribed programme and method of delivery – was heralded a success as scores in Standard Attainment Tests (SATs) increased. This represents a simple cause and effect attribution, and this simplicity is typical of, and probably necessary for, politicians.

Can the cause and effect be so simply related to each other? Let's try to unpick this. First, what we know for sure is that the literacy hour was introduced and that SAT scores increased. First, does an increase in SAT scores actually mean an increase in literacy levels? Some would dispute that the test does actually measure literacy and claim that some sections, such as those dealing with some aspects of grammar, are actually irrelevant. However, let's be charitable and agree that the test probably does broadly measure 'literacy'.

The second problem is whether the tests that have been used to measure this progress have themselves been of a standard level year on year. Again, being charitable, let's agree that they have, though this is by no means certain.

So, we have allowed that 'literacy' has improved during the course of the operation of the literacy hour. Is this a direct effect of a clear cause? Not for sure. There could well have been other contributory causes:

- the time focusing on literacy: up to the introduction of the literacy hour, such an amount of direct teaching of English language skills had not been the norm;
- the profile of teaching language skills had been raised;
- SATs were driving schools to focus on the results in those subjects – including English – that would be published;
- the publication of a proliferation of English language materials;
- growing familiarity with the tests and how to achieve levels;
- teaching to the tests; and
- concentrating on borderline pupils.

Effects too are not as simple as they may at first seem. In fact, there are multiple unintended consequences of pursuing the literacy hour:

- a standardisation of teaching that may restrict a more talented teacher;
- teachers' dependence on courses being provided for them, and a consequent lack of analysis – a vicious circle of dependency and decreasing creativity;
- a rigidity that could result in teachers not assessing and providing for the real needs of the children they are teaching;
- squeezing out of broader curriculum, especially physical education and music, with consequent implications for a 'broad' education;
- repetition, where aspects of writing in science are covered in literacy rather than science, with a consequent inability to link the two factors in a realistic way;
- for some, generally more able pupils, a boredom with the subject;
- more skilled teachers and fewer poorer teachers;
- a vicious cycle of increased teacher workload – stress – less effectiveness – fewer teachers – more stress; and
- less pupil responsibility for their own learning.

These comments are not meant to belittle the literacy hour project. They are intended solely to show that cause and effect in complex systems are not simple and linear. There will always be multiple causes and a variety of effects: in a complex system you cannot just do one thing. Many of the unintended consequences emerge only after a long period of time.

These, and many more, system effects occur out of the interactions between elements within the system. However, schools are open systems – that is, they are open to influences and forces from the environment outside of the school, as people in schools are only too aware, since much of what affects their work is stipulated elsewhere. I would now like to turn to that external context to examine ways in which it affects our ability to control and direct the way our school evolves.

Effects of context

As an open system, the school can only operate within the context of its environment, and that environment has a powerful causal effect on what the school does. In this way it affects the school's ability to control its own evolution. The powerful effects of the policy context on schools, for example, came out strongly in some of my own research (Raynor 2000).

The curriculum prescriptions by government over a long period have meant that schools have been much less able to exert any control over the process of assessing the needs of their particular community and putting in place a curriculum to cover this. In one secondary school, for example, with massive problems of truancy and alienation, staff felt really hampered in their ability to make the curriculum one that would be appropriate for their children. In a primary school, with 98 per cent of pupils from ethnic minorities, staff found the prescriptions of the literacy hour inappropriate, and felt they could meet the specific needs of their children better if they had the opportunity to control the process. As one head said, 'If you ask them [the teachers], they don't feel as if they're doing their own thing any more. What we're trying to get across is how you can put your own personality into this.' Or as another put it, what schools were losing was 'those teachers who in the old days were skilled at putting together a curriculum that was exciting and interesting, where they could indulge their passions and their enthusiasms'.

The last decade of the 1990s saw a significant increase in the processes of making schools accountable, and many of these processes can be seen to have taken on a controlling role in what people now do in schools. Some of these effects are plain to see; others are more subtle 'control at a distance'. For example, I was told about the value conflicts that can emanate from the publication of SATs results, where accountability processes caused schools to participate in practices that went against their educational philosophies:

> So we must do the revision, and we end up teaching to the test, which is a nineteenth-century concept. Then those schools who are so conscious of their reputations, one hears that maybe the box is opened a little sooner than it ought to be. . . . Whereas what we should be about is children's self-worth . . . nurturing them as future citizens . . . and feeling good about themselves. (Primary headteacher)

A secondary head (in a school very highly praised by the inspection service OfSTED) told me how the pressure for quick results obliged the school to go into a 'very tight setting' organisation when in fact his own philosophy, especially for disadvantaged pupils, such as theirs, was for mixed ability groups. He said he felt he had to compromise for the staff's sake.

Similarly, the inexorable push for efficiency was seen by some to have led to a much less people-centred practice, with many managers putting the

efficient operation of the school or department before the needs of the people within it. Hence the policy context could be seen as a force driving towards a more directive approach, and a greater stress on monitoring the poor performer. As one inspector said, 'how to get rid of someone we know isn't committed or up to it . . . taxes heads hugely'.

Possibly the most powerful influence on school practice has been the OfSTED inspection system, and its system and ways of looking at the education process have been adopted by many schools. One reason is not too difficult to see: the process of inspection is an extremely emotional one for the school, and particularly for the head. As Southworth (1995) has clearly shown, most heads have a very strong personal identification with their schools, and inspection can be seen as a threat to their very identity. Inspectors described how heads felt a 'massive' accountability for what happened in the school, and saw OfSTED 'as almost like a veiled threat' since they 'feel huge ownership of the school, and so any criticism is seen as a personal indictment of their own ability, when often it's to do with other things'.

As one head put it, 'the feeling you have is that the public humiliation thing is somewhere along the line', whilst another inspector refers to the great feeling of shame at having let the community down if the school is put into special measures by OfSTED. With such deep emotional involvement entangled in the process of accountability, it is hardly surprising that the 'requirements' of OfSTED are very strongly represented in the ways in which a school approaches its work.

It may also seem here that I am simply trying to find fault with the interventions of central government. This is not so, though I do believe there are unfortunate and counter-productive aspects of those interventions. But there have been equally many effects that schools have found positive, such as more open, visible and focused management practice, planning processes at all levels, clarity about priorities and objectives, and clear written policies and schemes of work.

My main purpose in these few examples has been to show how the control we feel we have as managers is to some extent illusory: many other forces are exerting control over the processes and outcomes of what we do in schools. These may be forces from outside the school organisation, or from within it, as the members interact. None of these forces has overall, direct control. Rather we should see them as causal tendencies that merge into a local pattern of tendencies.

Self-organising processes

At the end of Chapter 2, we saw how a defining characteristic of complex systems is the potential to self-organise – that is, to move from one state to another as a result of the effects of the individual actions of the elements,

without a central controlling element. The emergent outcomes, the new states that arise from such processes, are novel and unable to be precisely predicted. In classroom learning, as I suggested above, the learning of the pupils emerges from the interactions between themselves, the teacher and resources they may be using. We cannot make children learn: learning is an emergent property. This is not, though, to advocate that there is nothing we can do to help them learn – it does not mean 'laissez-faire'. The quality of the interactions that take place applies a certain structure to the process, and the influence of all the elements – other pupils, teacher, teaching assistant, and books – is not equal. This outer structure may help or hinder the quality of self-organisation that occurs.

Similarly in the school as a whole. Most schools have designed systems of hierarchy, or at least a system of responsibilities and reporting and accountability structures. This is the official organisation chart. What you will also see in all schools is another, informal network of relationships that evolves and changes through self-organising processes. It is this network that will ensure everyone in the school knows about the head having got a new job yesterday within ten minutes of school starting! This 'shadow organisation' contains all the range of human political, power and group activity, and can have very powerful effects, as we saw in the story of Jean at her new school. We might also ask whether the formal structure actually works in the way it is designed. Even here, there are often power plays, political affiliations, trusted and mistrusted colleagues and so on. What this means for us as managers in the school is that although there are, of course, power differentials and specified roles, the responses or lack of responses to these by organisational members form a total emergent outcome which everyone creates together. This is self-organisation, and it will happen despite all attempts to control events through some blueprint. The problem for us as managers is how to generate odds in favour of the self-organisation being functional and effective, rather than dysfunctional and ineffective.

The problem of creativity

The assumptions of rational processes and control, both at operational and at strategic levels, imply a view of creativity for school improvement that is planned, logical and foreseeable. I have tried to show in the last two chapters that this means that innovation is therefore something that is known beforehand, and can therefore be logically installed. It is most relevant to imported innovations of centrally prescribed approaches. In most cases it is a deficit model based on evaluating what we are lacking, and, by implication, what we know already. In target setting, the idea is to fill a gap between the present state and an identified future one. Unfortunately, the short-term nature of most targets, and the rational planning involved in creating a path to them, means that the approach has to be both quick and secure or the

target will be missed. In other words, it tends to work against experiment, and locks us into the already known. This is single–loop learning.

Rational processes and control through planning are useful, then, where we are introducing known projects or methods into the school. However, if we want schools to become more individually creative and produce step changes through double–loop learning, we need a wider view of the creative process. True creativity arises in the minds of individuals and through interactions between people, and is difficult to plan for. Complexity science gives us a different view of the way true novelty – creativity – emerges, which we will explore later in the book.

Conclusion

In this chapter I have examined the desire for, and possibilities of, exercising control over the way a school evolves, and have found this to be paradoxical. In one sense, heads, middle managers and teachers are 'in control', but at the same time they are not in control in that they are part of an interactive network that self-organises in key aspects which act to modify organisational design. Thus there is no single person or factor 'controlling' actual outcomes at any level in the school, though of course power relations mean that levels of influence are not equal.

The approach to innovation adopted in the school development planning approach and target setting model was shown to imply that:

1 the needed innovation is known at the start of the process; and
2 the steps to its realisation are already known.

This suggests that we are continually involved in single–loop learning, and therefore not examining presuppositions and acquiring different views of the world. It is a deficit model that is based on evaluating what we are lacking and, by implication, what we know about already. Target setting can work against experiment, and bind us into the already known. Complexity science gives us a different view of how true novelty – creativity – arises.

Key points

1 School managers are paradoxically both in control and not in control.
2 Neither school managers nor schoolteachers can control what occurs at the teacher–pupil interface, though they can influence it.
3 Strategic control through rational planning models contains problems of prediction and creativity, but is useful for implementing known reforms and innovations in a stable environment.
4 In complex systems there are many systemic effects that are difficult to control, such as vicious and virtuous cycles, and unintended consequences.

5 The context, and especially the policy context, removes much of the control from the school itself.
6 Self-organising processes mean that forces arise that are beyond the abilities of management to control.
7 True creativity and innovation are emergent phenomena and are not susceptible to control.

Further reading

For understanding the nature of control in organisations, Streatfield's (2001) book is academic, but approachable, and based on complexity theory.

The processes that operate at the student–teacher interface are interestingly recounted in several of the chapters in Atkinson and Claxton's *The Intuitive Practitioner*.

Fidler's *Strategic Management for School Development* is a very useful, clear and accessible account of the process.

Possibly still the easiest way to access ideas about systems thinking is Peter Senge's (1990) *The Fifth Discipline*, which also gives the manifesto for the learning organization.

For creativity in organisations, Simonton's 'Creativity, leadership and chance' in *The Nature of Creativity* (1998), edited by Sternberg, is an interesting perspective. Fonseca's *Complexity and Innovation in Organizations* looks at the issue from a complexity theory perspective.

Chapter 4

Chaos and emergence

In this chapter I want to show how some of the understandings of complexity science can help us to understand the processes occurring in school. We will look at events in three schools, drawn from my own research, over a period of time from the arrival of a new head. I believe that this longer-term view enables us to see some of the complexity concepts in action. For example, they show that outcomes are generally co-determined by the effects of several mechanisms, and the way new forms emerge through self-organisation at the edge of chaos. The main description will concentrate on Beldene Secondary School, with shorter supportive descriptions from the other two, Enderby and Thornwood. This is for brevity, since similar overall processes can be seen in each, and may be summarised as shown in Figure 4.1.

Beldene secondary school

Beldene was a large secondary school with approximately 1,500 students, 90 staff and a range of administrative and support staff, and was a school that was performing well in terms of national examination results. John had been head there for eight years.

Antecedent conditions

Before John came, the school had been led for a number of years by a head who had been at the school a long time and 'risen through the ranks'. Everybody knew everybody, and had generally worked together for a long time. This, John felt, meant life for staff was reassuring. Local inspectors had told him that the school was declining and stagnating, with people having been a long time in post. In short, they felt it 'needed a shake-up'.

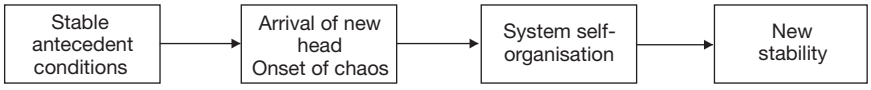

Figure 4.1 The process of emergence

Such equilibrium in systems, especially living ones, is equated with entropy and death (Kelly 1994). The imagery used by the deputy head appointed one term before the new head supports the idea of flow and change in dissipative structures: 'The staff here had been extremely stable – badly stable. It became counter-productive, because there was no new vision, new blood, no new energy coming into the school.' In this situation, the head allowed the other senior management to run the school, or such was their perception, which was to be an important factor when a head came in who actually wanted to 'move things forward' himself.

When a longer time perspective is taken into account, more causal mechanisms come to light. One senior member of the staff, who had been at the school for 20 years, was able to identify what amounted to periodic oscillations in the school's dynamics:

> John might well have said to you that he thought when he first came here that the school was in decline. It wasn't. It would have looked to an outside audience who didn't know the school . . . that the school was in decline. In fact, the school was in a period of calm after what had been a pretty difficult storm. (Senior teacher)

The storm referred to was a previous head who was perceived as developing change for the sake of change, 'making change to try to be at the forefront of change'. Although some had seen this period of calm as necessary, the strategy had now gone too far, and this respondent recognised that the school was becoming stagnant, and was 'just ready to punch and bring into the 1990s. And that's what needed doing' (Senior teacher). The image is one of a periodic attractor, oscillating between change and stability. Looking from this distance we can see the importance of the history of the system, how the past is co-responsible for the present (Cilliers 1998), and how a strong culture can hinder development (Stacey 1996), if it is one of equilibrium.

Arrival of new head and onset of chaos

John's arrival at the school was a significant change in one of the system's most important parameters, and a potential source of system instability.

> I think it was like the big bang theory, really. Everything was going to be done in the first week. The school was going to be rebuilt, the curriculum redeveloped, staff going to be turned round, everybody's job description was going to be changed. That was on the first day (smiles). (Head of sixth form)

This was not everyone's perception. Some remembered a slower process, where John 'seemed to take a couple of years to get the bit between his

teeth' (Year head). He was also a very different type of head 'to anything the school had experienced in living memory, I think, in so far as he was interventionist, proactive, visionary, thoughtful, determined and energetic, . . . and I mean them, absolutely' (Deputy head).

Other staff were cynical and resentful, especially those who had been 'allowed' to run the school previously, because

> John came and wanted to change direction, wanted to move things forward, and wanted to develop the school. There was a deal of resentment to it, because I think [there was] some scepticism that he wouldn't see it through . . . 'Oh, well, they'll start some good ideas off and then they'll go and leave us in the mire.' (Deputy head)

Clearly, there were organisational defence mechanisms at work (Stacey 1996), with inferences being understood about the quality of what they did in the school, and suspicions about the motives of the newcomer. There were also suspicions of a hidden agenda, that he was doing someone else's bidding:

> He had some early conflicts with senior members of staff. . . . I think he was probably given the brief by the governing body when he came to come in and sort things out. I think perhaps . . . part of his brief will have been to sort out the senior management structure. If that led to personality clashes, which it did, I think that was something he was prepared to take on board. (Senior teacher)

It is interesting that a number of people assumed this hidden agenda from the governors, when in fact he had been briefed by the LEA, but not specifically about the senior management team. This retrospective attribution of tough leadership qualities is also interesting – and probably true – but must be compared with John's actual feelings at this time, which are described in what follows.

On the positive side, many were impressed immediately by his energy, while others were not aware of any massive new impact. One long-standing teacher could not remember any great problems at first; in fact, he had good impressions, remembering the new head's dynamism and action. Another remembered 'one or two changes to things like the composition of one or two of the management groups', but nothing of the upset which did happen seemed to permeate to staff who were then in subordinate positions. What impressed another was the new head's 'visibility'; he was always seen around school, whereas the previous head had not been. The result was that the children all knew who this new head was, whereas they had not been as aware of his predecessor. This meant that the threat to send children to him was a greater support for staff. Furthermore, the second deputy had been

appointed only a term before the previous head left, and had actually never been accepted by the other two deputies, partly because another ally of theirs had applied for that job, and she herself 'had the knife in'. So this deputy had everything to gain by supporting the new head.

These differing perceptions showed the microscopic diversity in reactions, and also various defence mechanisms, unconscious processes, differing mental models and the implication of overt and covert politics. It is in this great variety that chaos may be generated (Stacey 1996).

For John himself, the first two years were very difficult, as they were for the school in general. He described it as 'a period of direness', and felt that the staff 'probably found it as traumatic as I did'. From a period of stability the school was plunged into a period of great turbulence. John identified several strands, each of which held potential for new ways in which the school might move – the possible bifurcations in the system.

First, he recognised defence mechanisms in action and that staff, and in particular, senior staff, who were used to a way of working, felt upset, insecure and threatened. They had lost the reassurance of stability, and John clearly did not want this situation.

A second series of causes revolved around the ideas John was putting forward. Through them staff felt he was saying they were complacent and underachieving, whilst they felt they had a successful school. They felt they were being criticised as persons and professionals. Again, they simply did not like the ideas he was presenting.

Third, John felt that some turbulence was inevitable with any new head, because they do things differently. He did see this as something of a palliative for his own actions, and his personality. He seemed unable to change his style – even though he recognised that 'a wiser head would have moved slower, would not have tried to change things, and change too many things. But that's not my way.' Even though he could intellectually entertain such a concept of management, he could not emotionally attune to it.

Fourth, he could also see that there were those who were more positive, who saw that things were not right, but were not in a senior enough position to influence things. They welcomed change, and saw this new head as a good opportunity for it to happen. Nonetheless, overall 'there was a lot of unhappiness, I think, on their part and on mine' (John).

Finally, external agendas further complicated matters. In the LEA, he found a strong political agenda from the elected members, and the officers also seemed to play some political game, with some people in their good books, and others not. A further external factor influencing internal morale was that budgets had been dropping, and that the school was having to lose staff from that cause as well. Driven by these factors, the governors and head moved for the school to adopt grant-maintained status, a way of being funded directly from central government, but many staff were against this, and the attempt failed.

It can be seen, then, that a number of bifurcations occurred, leading from the stability of the old regime to the instability of the new, with many different strands of feeling running through the school. It is also important to recognise that the head was not immune from the same feelings – he was not 'outside the system looking in', as it were. Rather, he felt traumatised, feeling 'God almighty, what have I got myself into here?' He was only too aware of the many variables at work, but unable to influence them, and 'felt dreadful through this period of time' (John).

Can this phase in the school's life be properly called the edge of chaos, that point of instability in the system that is balanced between order and total disorder? There is reason to believe so:

1 The situation is uncertain and uncontrollable. The head seems incapable of resolving the situation through his own actions. He seems compelled to behave in this way since it is embedded in his history and character.
2 The change in this important parameter of the system – i.e. an important position with formal authority – drives the system far from equilibrium (Kaplan and Glass 1995). This is demonstrated in the great variety of feelings, thoughts and actions of the staff, and in their intensity.
3 The different trajectories taken by different individuals and groups destroy the unified culture, which could be seen earlier as the major feature keeping the system in equilibrium, and leading to its decline. In this sense, John is symmetry breaking (Stacey 1996).
4 In this situation, the movement of the whole system defines its future. There is no 'competency' that the head can apply. Some random fluctuation is what will start self-organisation into a new emergent configuration. The head may initiate this, but it could happen anywhere in the system.
5 All the causal forces are in play, but apart from broad generalisations, we cannot know their starting points or value strengths. Each actor's deeper values, history and emotions are too complex to know. Systems at the edge of chaos are sensitively dependent on initial conditions. Because of the effects of amplifying feedback, similar, but not equal, starting conditions can lead to vastly different outcomes. This process is often called 'the butterfly effect', and is one of the reasons that 'predicting' people's behaviour can be difficult.

Aspects of culture can now be seen in the light of this theory. Cultures can become so settled as to bring equilibrium and decline, or so unsettled that they fragment and add to the uncertainties that the external environment brings. At some point along this continuum lies the ideal culture for both maintenance and development, where stable culture and idiosyncratic behaviour can co-exist.

From this unsettled position over John's first two years there, the school begins to self-organise, starting with the individual actions of a number of people.

Self-organisation

Over the next three years these events led, through a mixture of chance and determinism, to a new set of conditions – a field of possibilities – from which the school had the potential to move in different directions. Some of these conditions arose from the external environment, and others were internal, as shown in Figure 4.2.

The event that probably started the emergence of new order was when one deputy head literally walked out of a meeting and never came back again. Although this might have seemed on the surface to be an indictment of the new head, a current deputy, who saw it happen, concluded that he had had 'some sort of breakdown, I think. Strange circumstances – really bizarre.' In retrospect, she sensed he must have felt threatened, and in any case, had preferred his role 'as a very brilliant and gifted A level teacher, to the role of deputy head'. Simplistic linear cause and effect fail to account for cases like this. Certainly the new head's approach must have been a contributory cause, but also the experience and psychology of the deputy himself contributed to the outcome. This led to other people 'in fairly powerful positions' following suit, and a 'lot of staff left in that year', both because of the new regime and because of budget cuts. But not all left for these reasons. Several, after years of 'stability', 'were inspired by the idea that you *could* actually be promoted and go to work in another school' (Deputy head). A little later, the second deputy also left for a new job, which presented John with an opportunity. As he said, 'for all sorts of reasons [he]

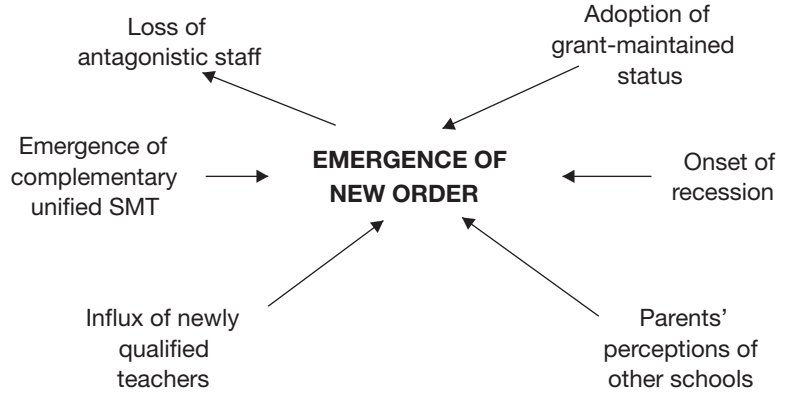

Figure 4.2 Background conditions to self-organisation

was very closely identified with the old regime. He'd been here a long, long time. And when he went, that gave me the opportunity to bring in a new deputy, who would be identified with me' (John).

For John, almost two years after starting at the school, the actions of individuals in leaving the school, plus the emergence of a unified team at the top, began to produce positive feelings – 'There's three of us now, folks. We're going to make it crack.' But there were still negative emotions. There was a feeling of great guilt that he had 'upset so many people'. But although it might be difficult to pull round, and 'bring the people with me', he realised that 'it's cleared out the deck. Now we can start.'

It is important to note that a measure of chance, as well as design, was at work here. The female deputy saw the new male deputy as 'brilliant', but more than this, they both shared 'absolutely' John's energy and vision. Since he had not appointed her, she considered it 'sheer luck that we agree to the extent that we do'. Further, staff saw them as having complementary skills – again by chance:

> I think what that did, as it turned out, I think it was a complete fluke, it gave us at the top of the school a very complementary team, in terms of the skills that one lacked, the others had in abundance . . . whether it's someone to take a tough line, whether it's somebody to manage the human side of staff, kids, parents better. (Year head)

This complementarity was to prove very important strategically over the next few years, when the interpersonal abilities of either deputy were used as a foil for the apparent task orientation of the head.

A significant number of the staff who left after that first year were replaced with newly qualified teachers (NQTs). This had two effects. First, the budget savings involved in employing NQTs as opposed to experienced staff, and on such a scale, meant considerable surplus funds were available. Second, such teachers would be more accommodating and flexible to new ideas, since they had not become fixed in their ways.

At this time, people were beginning to feel the onset of recession, and parents' attitudes to the purpose of school were seen to be changing: education was necessary for jobs. This, the appointment of a new and dynamic sixth form head, a change in strategy to encompass a wider range of courses, and the perceptions of parents and students as getting jobs became more difficult, contributed to an explosive growth in sixth form numbers, from 99 to 400 in six years. One year head suggested that sixth form growth, given the economic climate, was inevitable, but there was also the effect of the strategy which seized this opportunity, producing success and with it a virtuous circle which 'encouraged the growth still further' and with it a corresponding rise in staff morale (Year head).

As parental choice of schools developed post-Education Reform Act, the two closest schools began to decline in many parents' perceptions, perhaps partly through the effects of social selection. Some staff concluded that these social effects also increased subscription to Beldene.

On a second attempt, the school went grant maintained (GM), and in the process acquired even more funds and extensions to the buildings. As the benefits in resources began to show, staff began to show positive feelings. There was freedom from the local education authority (LEA), and they felt 'they were masters of their own destiny' (John).

This fairly positive mood stayed during John's fourth year, which was spent mainly in building morale and 'repairing fences, setting the stall out, getting the message across that this is what we're after'. At the end of that year, he felt that great progress was imminent: 'it was starting to roll. We were starting to move forward. A lot of the hassle was behind us . . . it seemed like the message was beginning to get across with a bigger number of people, and it was starting to lift off' (John).

Despite all this positivity, it hadn't quite 'lifted off'. In terms of examination results, and the feelings of staff and students, the expectations were not met. The process 'seemed to have stopped, or ground to a halt', and he and the staff were deflated. Importantly, he could not put this down to any cause: all the signs had been extremely positive. However, a new order was in fact emerging, and from this point onwards, the school seemed to experience continuing and growing success with an accompanying feeling of growing control over the school's destiny.

As these favourable conditions emerged, so did the staff's attribution of leadership to John. The senior team were in agreement that raising standards of achievement was their key objective and staff were able to identify with this philosophically, particularly since pursuing this meant abandoning the current Records of Achievement project of which they were not in favour. Staff were ready for a different emphasis:

> There was a move that staff could understand and appreciate, which was a move towards 'we're here to educate kids and get results. This is what we should be aiming at.' And recording of achievement shrank back to a much smaller, more manageable beast, and I think improved staff morale. (Year head)

Staff could see the benefits of the large increases in funding in vastly improved building extensions and resources and began to appreciate John's financial acumen. Even though many had been opposed to going GM, they now began to see and feel the advantages.

As these changes developed, so the staff were more able to accept the head's leadership. For some, there were clearly remembered turning points. One, for example, felt that it was the abandoned attempt to go GM, which

had resulted in the head 'burning his boats with the LEA', as a consequence of which he 'became his own man' (Year head). For another, it was the actual successful bid to go grant maintained:

> If you'd taken a straw poll before GM, then a year . . . later, you would have found a strong swing in favour of going GM. And I think that decision really cemented his position once it had proved to be effective. And what people saw in real terms was . . . each kid with a book in the classroom. It has an amazing knock-on effect. (Senior teacher)

Here again is amplifying feedback, and it is noticeable that the leadership attribution follows the realisation that his decision was good after all. John's leadership position was further cemented after the first rise in examination results, when 'What he did was he won the middle ground. He's never going to convert the minority, and he's always got the people who support. But he got that middle ground solidly behind him, and he's still got it today' (Senior teacher).

Thus a reconfiguration had occurred, through a mixture of chance and determinism, where John's leadership was recognised, adding an 'influence increment' to his formal role (Katz and Kahn 1978). John did not control this reconfiguration. His own actions, although weighted strongly through position and personal strength, are only part of the mosaic of causes that resulted in this new situation.

New stability in change

In some sense 'stability' is a misnomer for the events from the end of John's fifth year, since continued growth and development implied persistent disequilibrium (Kelly 1994), a time when positive amplifying feedback loops were dominant attractors. This stability was more akin to homeo-dynamics as described by Rose (1998). Examination results improved year on year. The sixth form grew almost exponentially. Long-standing teachers were heard to remark to parents that 'This is a different school now. . . . Every year it's different, totally different.'

It is, however, important to recognise that although the general trend here is forward towards improvement, there are still 'peaks and troughs', rather than a smooth, forward linear movement. In fact, John remarked on the oscillation in his feelings, as his emotional states changed over the years.

Although John recognised these peaks and troughs, a sudden movement counter to the trend occurred after four years of year on year improvement in the region of 9 per cent in examination results. The summer preceding the research, the GCSE results had actually gone down by 3 per cent. This was a bombshell to the head and deputy; the latter telephoned afterwards

to say he hadn't slept in three nights because of these results. For the head it was probably even worse:

> This was a real disappointment. It should never have happened. You know, what the hell are we going to do about this? We've got to put it back. . . . [It] is enough to make you think, 'This is a bloody disaster.' So again, you're still on the switchback. . . . That's the strain of it – the up and down – that's really draining. (John)

They were unable to find any explanations for this sudden drop – the pupils were more complex than the systems.

John's combination of a clear vision and direct style of achieving it had led the school to a new sense of achievement. People were focused. All of this was led strongly from the front by John and there were now signs that heads of department were beginning to resent the tendency towards micro-management. John himself recognised his single-mindedness as a weakness as well as a strength, since 'all these other issues of people growing and making their own decisions get squeezed out'. Middle managers felt a lack of autonomy and wanted to develop their strategic role. They were finding John to be too 'hands on' and though they praised his leadership and were very loyal, they wanted to develop their own roles – for example, one faculty head complained that they were 'not always allowed to have our own ways of dealing with people' and that if they did, and it wasn't John's way, 'we're seen to be weak'.

Unintended consequences of the strategies and approaches that had brought success were now becoming apparent: there were suggestions that staff and pupils alike felt pressured, middle management creativity tended to be stifled, and there was little time for staff interaction. One senior teacher strongly felt that

> We've gone as far as we can mechanistically. I think we need to re-introduce creativity. I think there's a need to allow teachers more scope to be able to do things their way, and I think that would bring increased GCSE results. The school's now ripe for the next phase of development. . . . That's the limit. We can't go any further because all we're doing is reproducing the same ideas we had five years ago. Teachers stop listening then. (Senior teacher)

Different attractors had now become dominant, with more demand for involvement, creativity and a change of approach. In fact, John took early retirement later that year, and a new head was appointed. He wanted to empower staff more, but found it difficult at first, being asked for permission for actions he felt staff should decide for themselves. Another phase had begun (Figure 4.3).

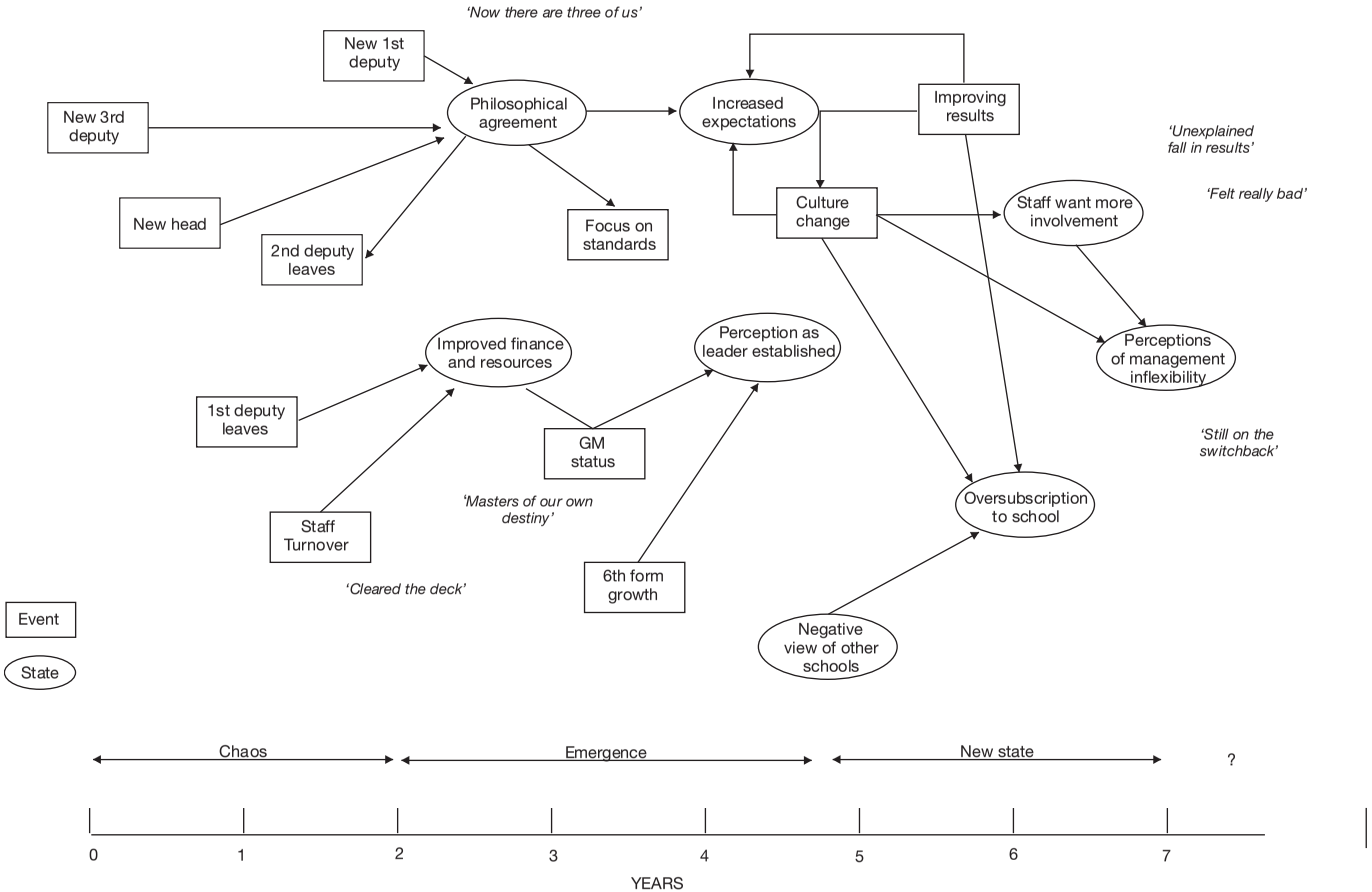

Figure 4.3 Events at Beldene

Thornwood

Antecedent conditions

The analysis of events at Thornwood Secondary School differs somewhat from the other two accounts in that the school had been suffering turbulence for some time before Angela arrived as the new head. Over the preceding years, the student intake had gradually been reducing and the proportion of disadvantaged students increasing. It can be seen that the introduction of parental choice increased this tendency, leading to one vicious cycle. This then produced another, whereby as staff levels reduced, the more senior staff remained, and with the new 'average' funding of school staff in budget allocations, they were expensive, draining the school budget. At the same time, because new teachers were not being employed, there was no renewal factor, and little or no development. Several heads had tried to address the problems, but none had stayed long. An OfSTED inspection found serious weaknesses, and an HMI visit resulted in the school being placed in special measures. This in turn resulted in an LEA proposal for closure, which was overturned by the council. The head resigned, and the deputy became acting head. It was into this configuration of conditions that Angela was appointed head.

Edge of chaos

The contingencies with which she was dealing soon became apparent. She found there was no common basis on which to talk about management to senior and middle managers, because 'the parameters which I had taken for granted applied to a particular management situation didn't exist in this school because they did not understand that that was something which at their level they should be doing. It simply did not exist . . .' (Angela).

She was also amazed by the culture of the school and 'frustrated by the inability of anything to happen'. Angela realised that the framework created by her previous experiences, upon which her assumptions were built, was so totally different from theirs that 'you can't even say to them, "Why aren't you doing this?" They just look at you in amazement and there's no common understanding' (Angela).

This incompatibility between the mindsets of staff and head thus provided a major obstacle to communication, not least because Angela assessed that there had been no planning and no articulation of vision for a long time. Instead, because of the events of the last two years, 'people have actually lost confidence in their own values and in what they think. So it's "Well, we'll do this because we've been told to do it."' However, staff had failed to fully accept the situation they were in, and it took some hard talking from Angela to get the message to penetrate. They had not really heard what was being said about them before: 'and they were horrified. They sat there and said, "We find it very difficult to sit here and listen to that." So I said, "Do you want me to read it again?"' (Angela).

Culture and competence, then, provided two forces that clashed with her own perspectives. In addition, she found a degree of cynicism in a senior management team which had seen heads come and go; she felt they were thinking she would soon 'run out of steam' and leave. There was also the deputy who had been overlooked when Angela was appointed, who also provided difficulties of attitude. All of this left Angela feeling 'enormously isolated' during this first term, with few instances of any feedback to say how people were feeling as she began to pursue agendas to counteract the problems she saw.

Angela's agendas stressed 'walking the talk', honesty, simplification and clarification of what needed doing, and leading by doing. However, the urgency involved in fulfilling the action plan within prescribed time limits meant 'we haven't got time to do a lot of the kind of things which I would describe as my normal management style'. That is, her normal style where she 'sowed seeds, watching where they take root, and building on that', was replaced by a more directive approach, but with consultation. Thus teams were free to decide their own agendas for meetings, but she expected to see copies of them and minutes of meetings as a mechanism for monitoring.

Emergence

Some six months later, a number of events had affected the situation. First, Angela gained personal support when the first deputy left and was replaced, thus reducing one source of conflict. She gave the second deputy a change of task, which 'revitalised' him, and two weak staff also left. These developments, mostly unanticipated, left her in a stronger, more supported position.

Second, there had been an HMI visit in which she was told standards of teaching had not changed and she was recommended to focus more sharply on the classroom, using OfSTED criteria and focusing more on professional incompetence in the classroom. That is, there was a much stronger emphasis on systematic monitoring rather than the informal monitoring that had gone on previously. The result was that 'I didn't learn anything that I didn't already know. But at least I could evidence it and I knew in detail why it was the way it was. That was interesting with the staff because they were very unhappy about that indeed' (Angela).

This systematic search for evidence of underperformance caused great concern from staff as they were told, 'This is where your lessons have to be, these are the things we'll be looking at' as the OfSTED criteria were presented to them. At this,

> people voiced the whole range of opinions from 'This is disgraceful. You know teachers are being blamed' through to 'Well, I never minded you

> being in my classroom, but I do now if I think somebody's going to lose their job because of it', through to 'What the hell are you all talking about? Unless we get this sorted, we're all going to lose our jobs. Why should I lose my job because there's some so and so in this building not pulling their weight?' (Angela)

This single management action can be seen as symmetry breaking. No longer was the staff culture as tightly knit as Angela first found it, but by the end of this meeting, everyone had accepted the inevitability of this process because the school was in special measures. Angela herself recognised that she had become more 'hard-edged'.

This phase can be seen as one where the old order has been fragmented. Although the organisation is still at the edge of chaos, where many different interpretations, attitudes, worries, fears and discontent co-exist, the beginnings of a new order can be discerned. The main driving force is the demands of the policy context, which causes Angela to adopt such hard-edged approaches. The school is actually fighting to survive, and in a short time frame. The realisation of this by all the staff shows it had reached a critical position, and a third unexpected event provided an accidental 'initial kick' (Maruyama 1994: 79) which resulted in a re-alignment of forces of culture, task and leadership.

Two staff had been to see another school that 'had made a spectacular turn-round' and reported to a staff meeting that the head there had been 'a bully and a thug'. The result was amazing. Staff 'stood up and actually said, "Well, we want you to be like that."' For Angela, although this was not her style, 'it was a psychological moment that I knew I had to grasp', one that had 'broken the mould'.

New order

This new alignment of the task, leadership, staff and external context was clearly a self-organising process, stimulated by several chance occurrences, and the co-evolution of leader–subordinate relationships. From here, the school managed to work its way out of special measures.

If leadership style can be seen as part of this reconfiguration, leadership perception stands to some extent outside the system, observing what the system *as a whole* needs. Angela realised that although this rather autocratic arrangement was appropriate for this urgent situation, a different approach would be preferable as the school developed. She was already using consultants to build staff capacities, 'working away at things that are organic', and talking about focusing on reflective professional practice and flexible project teams.

Enderby middle school

Enderby was a very successful, oversubscribed middle school of about 400 pupils. Peter had previous headship experience, and had been in the school about 3 years.

Antecedent conditions

Before Peter there had been a long established and respected head. One teacher stressed this head's great social abilities and ways of making people feel very special. There seemed to be, however, a suggestion that he was out of touch with trends, being described as 'a very good head, you know, *at that time*' (Teacher). Perhaps for this reason there was apprehension. Would they measure up to the demands of a new head? What changes would be made, and would they like and cope with them?

The previous head had given people jobs to do in an ad hoc manner, rather than giving them clearly accountable roles, and when HMI visited the school and asked for the development plan, 'he said, "Ah! It's in there" [his head]' (Head of Maths). Thus the culture of the school had been heavily concerned with the people dimension at the expense of task management – the 'country club' management style (Blake and Mouton 1964).

The onset of chaos

When Peter arrived, the head of maths remembered that 'for a lot of people, a lot of the old guard, it was a *terrible* time'. This was a completely different regime from the one before, and they could not cope with the change. He likened it to 'the modern world', with a head 'who set parameters and wanted things happening. He wanted people to be accountable.' The result was that 'there was a lot of whispering going round. There were people who just did not want to hear.' For others, the new head was seen as efficient and appreciative, with a vision of where he wanted the school to go.

For Peter, events were equally difficult. The deputy who had been overlooked for the headship bore resentment 'and a lot of work had to be done to prove credibility'. The governing body was split over the appointment, and 'whatever you said . . . would not be what half wanted to hear . . . so there was a battle going on in the whole school, really, and that was difficult' (Peter). These things made Peter angry, and simply spurred him on.

The preferred management style Peter brought to the school, of the whole school solving issues together, did not work in this environment, both because of the prevailing culture and because of 'downright awkwardness from some people – "he's the head. He can tell us what to do"' (Peter). Peter was therefore constrained into adopting a more directive style 'because of the personnel mostly, but also because of the culture and outside pressures'. At this stage, then, there is a great lack of coherence, with individuals following

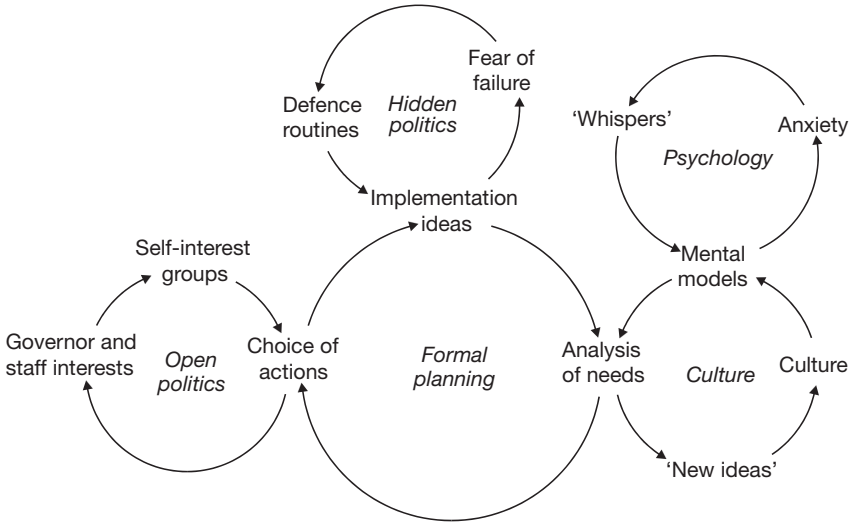

Figure 4.4 Events at Enderby

many different paths. Figure 4.4 summarises some of the processes operating at this time, showing how they influenced what Peter was trying to do.

Self-organisation

At this point, two terms into Peter's headship, a senior member of the staff decided to take early retirement. She had been a particular problem for Peter, and so for him 'that was a major step forward' and signified the moment when things started to improve. Since she was also a governor, 'one or two governors went with her as well – there was a clique. It was terrible' (Peter).

They also realised at this time that there would be an OfSTED inspection sometime in the following year, and this knowledge seemed to enhance coherence, producing a businesslike atmosphere. Peter organised inset (in-service training) for staff, looked at each department and saw a gradual growth in teamwork. Staff remembered this period as one where realisation of the inspection pushed apprehension aside, where Peter 'rolled up his sleeves' and worked alongside staff. As one teacher put it, 'that was where he became "Peter"'. However, it was a period of stress, frustration and increasing pace of events, where sometimes staff thought, 'My God, what does he think we are? We'll never manage it' (Teacher). Because of the alignment of purpose, they could bear this, 'because I think if we had not moved at that pace, we would not have been as successful as we were. And nobody wanted that. You know, we wanted a good OfSTED' (Head of Science).

Because of the time pressure, Peter realised that although he could see teamwork growing, he still needed to be quite directive. Thus Peter could be seen to be orchestrating a movement from one management style to another, nudging teams forward rather than exercising outright autocracy. Staff supported this view, saying he was directive 'in a nice way', and some staff at least realised that Peter knew these things had to be in place for the inspection. Others recognised Peter's visibility at this time. He was 'on top of the children', led by example and was developing a supportive culture, providing inset to help staff to understand the OfSTED process. However, there were still others who could not countenance the new role accountability that Peter had introduced, and who felt swamped and threatened. As a result, more staff left at the end of Peter's second year – 'OfSTED got rid of people before it came' (Head of Maths).

At this stage, then, positive cycles were beginning to predominate amongst the staff, but relations with governors had not improved. Peter remembered a governors' meeting:

> It was very negative, and I felt very frustrated that even after I'd got the school up and running relatively well, then, had made my way with the staff, and the school was beginning to develop, well I was still not winning with the governors. . . . I had done some great reports, a marvellous budget, well produced, you know, I'd done the school development plan, having consulted with them. And there were just veiled criticisms and things were dismissed and they were back to arguing about trivia, and going back to previous problems. (Peter)

The term before the OfSTED inspection, then, Peter was able to appoint three new teachers, one of whom had worked with him before, and that made a great difference to the school in terms of culture, alignment and support. As he said, this helped the culture of teamwork to grow, but what was perhaps more apparent was a new ability within the school to self-organise in a flexible way. With one full term to go before the inspection, it was clear that the staff wanted Peter to be more fully directive of what they were doing. They and he realised that 'people were so busy doing their own things' that many decisions had to be made by Peter alone. Thus both staff and head were able to re-align their practice with the perceived need for urgency. This period culminated in a successful OfSTED inspection and relief and 'elation' for staff. As a result, there were clearly attributions of leadership given to Peter. He was 'brilliant. . . . He did a fantastic job all the way through . . . you just couldn't have wished for a better person in control at that time' (Head of Maths). Another senior teacher saw it as a team effort, where 'we all felt as if we supported each other through OfSTED' but recognised that such a supportive culture does not happen by chance.

New order

At this point, two years after Peter came to the school, a new coherence between staff, head and task had emerged. Following the successful OfSTED inspection, the governors, who now seemed happy with his leadership, roundly complimented Peter. For the next year, teamwork continued to develop and relations became easier. At the end of the year, the school was so popular with parents that the LEA was obliged to enlarge it by the addition of a new class, a situation that bolstered morale and coherence even further. However, even though a new coherence was evident, Peter recognised that the old culture still persisted to some extent, and there was still some way to go.

We can see once again in this account the movement into the edge of chaos, where there is stability – the school was still functioning in an orderly way – but where there is also an equal degree of instability, where people were often not sure what should happen, where overt and covert politics were in evidence, where there were fears and concerns, where the culture was evolving, and where staff were leaving and being replaced. Out of this mix of interactions, a new order emerged, as the school re-organised its relationships and practices to be in alignment with its external context, in the form of an impending OfSTED inspection. Table 4.1 shows the factors operating at each stage of the process.

Conclusion

This account of change in these three schools shows the self-organisation involved. Although the head holds a formal power position, it is clear that there are many factors all influencing the way the school moves, and the emergent form is the result of the interaction of all these forces. As such, it cannot be known in advance, is not the result of purely rational approaches, can be influenced but not controlled by the leader, and is influenced by chance events. Of course, we may make predictions based on our past experience, but since situations, people and their relationships and interactions are never precisely the same, we can never be sure predictions are valid.

Table 4.1 Self-organising factors at Enderby

Stability	*Edge of chaos*	*New order*
Country club management	New head	New governor relations
Social cohesion	Accountability	Teamwork
Strong culture	Anxiety	School expansion
	Covert politics	High morale and success
	Fragmentation of culture	Attribution of leadership
	Political activity and coalitions	
	Chance events	

A second point illustrated in the accounts is the particularly powerful state described as the edge of chaos. This is a gateway, a field of possibilities of what might emerge. It is for this reason that it is seen as essential to the creation of true novelty. As a system moves from stability, there comes a point, referred to as 'the edge of chaos' (Lewin 1992) or 'self-organised criticality' (Bak and Chen 1991), of readiness for self-organising into a new form. The importance of random events in the environment was shown to be significant. Chaotic systems are very sensitive to environmental changes, and the changes in personnel, for example, had very significant effects, much more so than during periods of stability.

Chapter 5

The art of juggling

Juggling – we all do it

Rarely when we act do we have the luxury of taking into account just one variable as we decide what to do. Most of what we do involves balancing several variables and aiming for an optimum outcome that satisfies most of them. Just consider the process most of us go through when we buy a new car. Should it be petrol (less noisy but uses more fuel) or diesel (more noisy, usually, but uses less fuel)? Should it be a hatchback, estate or saloon? What size engine would be best? I know a small engine makes sense in the city, but wouldn't a more powerful car be more exciting? And on goes the list of variables that need to be considered. Sometimes it would be easier if there were only one car to choose. Take it or leave it. In school, much of our work involves juggling a number of variables, taking them all into account to reach an effective outcome, and we all do it whether we are teaching in class, managing a department or running the school. The following two examples happen to be from senior managers, but teachers at all levels will recognise the process.

During research I was conducting in a particular secondary school, I was deeply involved in discussion with the head, 'Alan', when suddenly his door was thrown open to reveal a teacher, quite red in the face, accompanied by a 15-year-old boy who had been insolent. At the end of her tether, she described the incident to Alan and asked him to 'deal' with it. Alan asked her to leave the boy outside the door until he had time to deal with it. When, in a few minutes, he brought the boy in, it was clear he knew him: he had been a problem before and had been sent home before. He admonished the boy for being rude and hinted that 'your mother will be pleased if I send you home again, won't she?' He then told the boy to apologise to the teacher at break, and said that he would check on this. Alan's approach then moved on to stressing positive behaviour, and that if the boy did behave in this way, then Alan would write it down in the boy's journal 'in letters six inches high' so his mother could see it. The boy then left the room on a positive note.

This is a normal management event in schools throughout the land, and I am not proposing there is anything exceptional about it, or that only head-teachers do this. What is interesting, I believe, is how it illustrates the way we can take several variables into consideration at once and take action that is in alignment with them all. In discussing the incident with Alan, he actually felt the offence was not sufficient in normal conditions even for referral to a year head, let alone the head, but realised it was not a trivial matter to the teacher at that time, and that he had to be supportive. He was concerned, though, that the system was not 'subverted'. In a brief three-minute exchange, then, he had acted in a way that balanced several variables in the situation. He had admonished the boy, supported the teacher, caused justice to be 'seen to be done', seen the system for referrals was not subverted and supported the boy, including some concern for his family. This was simply a routine situation, a part of the unplanned activity we have to respond to every day.

Whilst I was with another head, 'David', a concern arose about whether a particular pupil was in class. Because there was some sensitivity about the situation, he did not want it to be obvious that he was checking on her. So when he went into the classroom, he engaged in some friendly banter with the whole class, and then went around looking at their individual planners, and having a short word with each child, and of course, in the process establishing that the girl in question was actually in class.

In our discussion afterwards, David revealed he had used this as an opportunity to pursue five other agendas:

1 To keep himself visible and maintain his contact with the children.
2 To monitor the use of diary planners, an initiative that had been foundering a little, and to demonstrate through this to the teachers that these were important.
3 To find out from the planners what was going on in that class. That is, it was a way to monitor the teacher, who had been giving some concern for sometimes 'coasting'. This he felt more useful as an unexpected 'drop-in' session, rather than a formal observation 'where they have time to plan for your visit'.
4 To see the quality and freshness of the classroom displays and the general classroom environment.
5 From the planners, to monitor the way year heads were doing their job of routinely checking and signing them.

The significant feature of these two incidents is their very ordinariness, and the way our minds can align a number of factors in a quite intuitive way and perceive the appropriate action to take.

A web of interacting forces

This ability to juggle is vital in management, and generally becomes more intensive as responsibilities become wider. The reason for this is that the wider your management responsibilities are, the more complex is the web of interacting forces you find yourself at the centre of. What is more, the patterns of interaction are constantly changing. As one head told me, 'I feel as if I'm bringing things forward in a kind of complex web of interaction. How *do* you get from A to B? I can't write down a strategy. I *act* it but can't describe it. It's a feel . . . a process of doing things and testing reactions.'

I think the nature of the way we work with a range of different interests that can all impact on a situation is well brought out in this rather hesitant groping towards an explanation, with its references to 'feel' and 'testing', as we move ahead on several fronts at the same time.

I referred in Chapter 3 to the way information travels in a system of high interconnectivity. In this chapter I would like to focus more on the idea that in such a system, everything influences everything else in some way, and that the outcomes of the system are therefore co-determined by a range of forces. In a school, there are many forces contributing to the various outcomes of education in that school, but those forces are neither equal nor constant. For example, some people may choose not to exercise their ability to influence matters in one situation, whereas in another situation they may take a very strong stance. The opinion of a head of department may carry more weight than that of a newly qualified teacher, but may be modified by the latter. Outcomes, on whatever timescale we choose to measure them, are a result of these many interactions.

Configurations

We can see these outcomes arising from a particular configuration of forces in any school, and it is easy to see that this configuration is different for each school. It is shaped principally by four factors: internal context, task, leadership and external context (Figure 5.1).

Internal context

The internal context exhibits many forces, potential or active, that impact on the evolution and outcomes of the school. These are mainly concerned with people, either singly or in groups. As we saw in Chapter 1, individuals have their own mental models of the world and presuppositions, beliefs and values that influence the way they frame events. Each of us is a unique result of our personal history, and we will tend to act in accordance with such frames as we have developed. We also have our own level of competence in our work, some of it affected by our frames, some by intrinsic abilities,

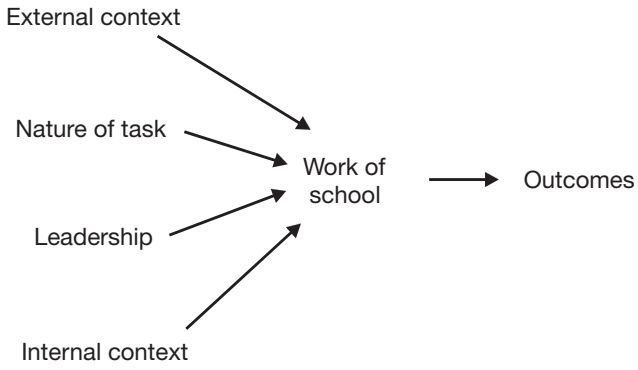

Figure 5.1 Influences on outcomes

some by training and some by our level of application and interest. I use the word 'we' here to underline the fact that we are a whole community in operation, and these comments apply to everyone, including the head.

It is partly this unique history that determines whether we respond or not to particular leaders. You may remember the way staff in Jean's new school did not feel the approach she was adopting was true 'leadership', because their history had led them to see leadership in a different way. In the attribution theory of leadership, people become leaders because others agree to treat them as leaders, usually by attributing qualities within the situation to them. In the last chapter, for example, we saw how John's reputation as a leader grew. Some of this attribution was based on outcomes that people were pleased to be associated with, behaviour they admired and personal attributes they respected. Thus when asked what made John an effective leader, some of the things they said are as shown in Table 5.1.

What such a composite table does not show, however, is that each person would respond to a different matrix of aspects. The associations they make between certain leader behaviours, qualities and outcomes become part of their mental models of leadership.

Many complexity theorists would regard these individuals as autonomous agents in the system, and they themselves are systems with their own map of the world, acting autonomously in their own interest. Autonomous individuals can make individual choices, based on rational self-interest, emotion and cultural constraints. Others, however, regard interactions as crucial, and believe that rather than each entity being 'autonomous', they evolve collectively. That is, the relationships form the individual as well as vice versa, a view that I will examine in Chapter 8 and which will have important implications for how we run our schools.

Within the school organisation, the groupings formed by individuals, whether formal, such as the senior management team, or informal, such as the shadow organisation, with their rivalries, political activity, disputes and

Table 5.1 Positive leadership attributes

Outcomes	*Behaviours*	*Personal attributes*
Improved results	Visibility and support 'on the ground'	Strong – 'knows where he's going'. Clear vision
Improved behaviour	Strong bias to implementation Refusal to 'let things ride'	Enthusiasm
'Turned school around'	Uncompromising	Quick mind and powerful memory
Grant-maintained status of school	Involvement	Financial ability Drive and determination

agreements, also have their own lives and exert their own force. They also combine to form other less tangible forces like the ethos and culture of the school, which may produce some constraint on the autonomy of individuals. Within all this, there is the lingering force embodied in the history of the school, which defines how it has come to its present state of evolution, and what practices have become normal.

Finally, schools differ in terms of the children they are working with. The way a pupil is now is the outcome of many processes such as the influence of family, previous school and teachers, social circle and other relationships. Sometimes a school's population of pupils is skewed towards a particular sector of society, often as a result of self-reinforcing cycles. One headteacher described his school's position between two others:

> So I take all the children who are unhappy from the leafy lane school [and] I take all the children who feel they are being bullied from the difficult school . . . but we don't attract the four-wheel-drive people and the silk headscarves, because they go to the leafy lane . . . in what I call semi-detachedville. Our side of the street come here and the other side go there.

Task

The second aspect of the internal configuration in which schools differ is that of task. On the surface this seems quite uncontentious: the task is to educate children. But what this means for different schools, with differing philosophies and different pupils, can lead to quite different practices, despite the apparent dominance of government policy.

Visions, for example, can vary. One secondary head wanted freedom to promote a more 'relevant' work-based curriculum for a school drawing from a disadvantaged area. Another head had the firm conviction that 'there's an

enormous amount of potential in kids that is there to be developed', and that this meant getting the best academic results possible. A middle school head was concerned to give children a good education, but a happy one with wide community involvement and a concentration on quality of life. Another wanted to work in a mixed ability format while another believed in operating 'tight' setting according to ability.

Staff themselves, as autonomous agents, may or may not be fully in line with such visions, and of course a major concern in school management theory is to promote such alignment. The point is, there can be differing views about what the key tasks of the school are, and these can be in conflict with those of management, or those prescribed by central government, or demanded as the outcome of inspection. The result can be 'a vision-in-practice' which bears little resemblance to the officially espoused vision statement.

A final aspect of the school's task is contingent upon its stage of development. A failing school will face a different task from a Beacon school. The former will have to struggle to catch up as it tries to react to the fact that it is trailing, a process that may involve adopting good practices from other schools. A Beacon school, on the other hand, may see its task in terms of being innovative and developing new, cutting edge practice, and yet another school may be in a position of consolidating practice it has recently developed. What the school, or individuals within it, sees as its task is a potent force that will affect practice strongly.

Leadership

The third set of forces I would like to consider are those associated with the leadership of the school, the department or other sub-group in the school. As with other agents, the leaders will bring the influence of their own history, which will produce a tendency towards certain kinds of action. John, for example, recounted how his first head had influenced him. Although this head 'couldn't deliver', he was a 'really deep thinker' and a model of what to aim for in education. Another one, 'the best head I've ever worked for', was not a philosopher but he got things done. The two complemented each other, and the second influenced John's approach powerfully.

Derived partly from history and partly, perhaps, from genetic endowment, the personality of the leader, the degree of charisma and other qualities he or she exhibits, the degree of cognitive complexity and flexibility he or she possesses, and the range of styles in his or her repertoire are further variables that come into play.

External context

Finally, there is the crucial question of how the school responds to the external context, how readily it is able to adapt to changes within it, and

how much it can maintain its own integrity. Southworth (1999) has suggested that policy-makers are having more impact on the practice of headship than researchers and theorists, and that their views are finding their way into the 'common-sense' understanding of heads. This analysis was supported in Chapter 2, where the policy context was shown to exert a powerful shaping influence on headship practice and the way schools operate. Similarly, other contextual forces have the potential to add complexity and influence practice. Parents and governors, with new-found powers, are prominent amongst these. These are part of what Gharajedaghi (1999) terms the 'transactional environment' since, although they are strictly outside or on the margin of the school organisation, they are nevertheless factors that can be influenced. Table 5.2 summarises the range of forces acting on outcomes.

A unique configuration

The point of this excursion through the variables that can be seen as potential forces acting on the outcomes of the school enterprise is to demonstrate how complex this configuration is within any one school, or department. To systems theorists, this complexity is the 'variety' within the system. Becoming an expert leader is a question first of perceiving this rich variety. Failure to recognise it will not do, because events will then too often be unexpected, because of the surprises that complex systems can generate through counter-intuitive behaviours caused by feedback loops, non-linear behaviour where small causes can cause big effects, and the rich interaction between many variables all influencing each other.

The question of variety is important for two reasons. First, systems theory tells us that a system like a school must have sufficient variety, or diversity, within it to match that of the environment to which it needs to adjust, or it will be unable to respond. The second is the need for management to be able to respond to, recognise and build this variety within the organisation, in order for it to be creative.

Table 5.2 Forces acting on outcomes

Internal context	*Task*	*Leadership*	*External context*
Mental models	Vision	Leader's history	Policy context (direct)
Staff competence	Staff alignment	Genetics	Policy context (indirect)
Attributions of leadership	Vision-in-practice	Cognitive qualities	Parents
Member interaction	School's stage of development	Personal qualities	Governors
History of school		Range of styles	School eco-system
Ethos and culture	Need for creativity and innovation		Lifestyles
Pupil backgrounds			

The great systems thinker Stafford Beer (1979) concluded that the biggest reducer of variety in an organisation is sheer ignorance, and that the only way of handling that variety is having control systems capable of an equal amount of variety. This is Ashby's law of requisite variety, and it suggests, therefore, that the leader must be able to match, in his or her own mind, the complexity of the system. As Jaques and Clement (1991) have put it, the manager has to be able to handle the level of complexity for that job, namely:

(a) the number of variables operating;
(b) the ambiguity of the variables;
(c) their rate of change; and
(d) the extent to which they are interwoven.

It is because of requisite variety that complexity theory tells us that when a single component of a system (say a head or a government) controls a collective behaviour (that of a school or school system), the system of collective behaviour cannot be more complex than that individual behaviour (McKelvey 1999). Thus the potential range of creative behaviour a school can generate may be reduced where the head maintains sole control, and has insufficient cognitive capacity to realise what variety exists within the school. In other words, the school is restricted to the responses the leader is able to generate. Further, the leader is actually part of the 'variety', part of the configuration – within it rather than looking in on it. Therefore, being able to 'match' cognitively the complexity of the system in order to direct it involves seeing his or her part in it. This is, of course, assuming that leadership resides in one person. This has implications for leadership that we will examine later, and applies equally at a different level to government attempts to control what schools do.

However, what is most important is that this blend of forces means each school is unique. Cilliers (1998) points out that there is no over-arching theory of complexity that can allow us to ignore contingency. That is, there are no short cuts. If something is complex, it cannot be adequately described by a simple theory, as we often try to do as we devise rules of 'best practice' or theories of leadership. A specific complex system is irreducible. This means that there is no substitute for understanding: prescriptions for management behaviour will fall short since they will not know the local context and configuration.

Wide diversity within the school organisation has both positive and negative possibilities. The positive is that such diversity helps in the organisation's ability to align with the complexity of the external environment. It is in this diversity that the possibilities of creativity and innovation have their source. When everything is the same, there are no tensions from which new things arise.

However, paradoxically, we feel no sense of security or continuity if everything is constantly in flux. We need to feel stability within the organisation, a sense of structure we can rely on. This is the paradox that in the school we need stability and change at the same time. Some complexity management theorists use the theory of dissipative structures to describe this process. Briefly, as described in Chapter 2, a dissipative structure is one that is an open system that maintains its overall structure even though there is a constant flow and change of components. Critical points of instability arise from this energy flow, and lead to new emergent forms of structure.

Such new, self-organising forms of structure present one way in which this wide diversity in the school organisation becomes manageable. Wenger (1998) has written about communities of practice, and the concept, I believe, takes our understanding of self-organising processes within the shadow system and adds them to those of the formal system. He describes how workers form communities of practice surrounding their particular aspect of work. He uses workers in a claims processing department to illustrate his point, but we can see the same processes at work in, say, a school department, a key stage or other such small grouping. Here is how he describes the process:

> Workers organise their lives with their immediate colleagues and customers to get their jobs done. In doing so, they develop or preserve a sense of themselves they can live with, have some fun, and fulfil the requirements of their employers and clients. No matter what their official job description may be, they create a practice to do what needs to be done. Although workers may be contractually employed by a large institution, in day-to-day practice they work with – and, in a sense, for – a much smaller set of people and communities.
>
> (Wenger 1998: 6)

These are networks of people who take part in the practices of a particular community. This mutual engagement in practice, he says, is a way to experience belonging and meaning in our lives, meaning which is negotiated through conversation in a continual process. Our participation shapes both our own experience and that of the community. This also means that our own identities change within the context of the community. Who we are, and who we feel we are, are both outcomes of our social action. It is also within this community that our work is seen as worthy, and where our competence is confirmed by our participation. Thus there is interconnectedness between the community, the practice, our own identity and our ability to see things as meaningful.

Note that this very local process of self-organisation in small communities cannot be directed, though it may be influenced. Nor does it affect the uniqueness of the school as discussed earlier. This is still a part of the school's

unique configuration. However, it does act as a source of coherence within the community, and it is this aspect I would like to address now.

Coherence

The art of juggling refers to the way leaders keep all the influences on school outcomes in some kind of coherence. The conventional wisdom, in the face of this great variety of forces acting, or potentially acting, on any outcomes, is that they need to be aligned, and that usually this is the leader's task. There are several levels where such alignment is needed if the school is to operate efficiently without wasted effort.

In schools, we believe very strongly in the head of a school aligning people behind the vision. The implication is that the vision behaves as an attractor to which everyone's actions are drawn. Another interpretation of alignment is that the organisation should be aligned to meet the needs of the environment, and since these are constantly changing, then the alignment must be constantly adjusted. Otherwise the school could find itself preparing children for a world that no longer exists. Finally, internal structures and processes need to be aligned with the aims and sense of purpose of the school. If, for example, the school wishes to encourage innovation, then its structures must be supportive of that wish.

The internal coherence of the school can emerge without being directed specifically. The three studies showed, to different extents and in different ways, movement from stability, to chaos and then to an emergent new configuration of the variables of context, leadership, individuals, organisational culture and task. This provided a new coherence, but the reconfiguration was strongly influenced by a pragmatic need to cope with the specific demands of the policy context, at least in two cases. In both of these, it was also clear that a directive style of leadership had emerged and kept the whole internal process coherent *at that time*, but there was evidence in all three schools that the balance would need to change. For example, at Beldene, new attractors began to emerge and gain ground as previous strategies bore results and changed the situation of the school. At that point, the school was ready for a new configuration, but John found it difficult to change his approach to accommodate this. Maintaining such a dynamic balance means that the organisation can change – the balance will fluctuate to accommodate changing conditions in either the internal or the external environment. Coherence is a shifting and dynamic process.

In complexity theory, coherence is seen to be able to emerge spontaneously. Capra (1996) illustrates this through laser theory, where there is a transition from normal lamp light, which consists of an 'incoherent', or unordered, mixture of light waves of different frequencies and phases, to 'coherent' laser light, where the light is all in phase and of a single frequency. This transition occurs spontaneously as the atoms emitting the light reach

a critical level of excitation. Clearly, the coherent beam is more focused and powerful. Such a concept of coherence adds to the realisation of the power of culture in an organisation (e.g. Schein 1985), and the leadership concern for alignment, by bringing all nested subsystems into coherent alignment.

These studies of three schools at particularly turbulent times suggest that self-organisation to attain coherence in relation to the external environment is a dynamical property of the system. In these cases, the task was very clear – the 'tight' end of Handy's 'best fit' (see p. 83). Where the task is clear and structured, leadership should also be tight, which is the way the configuration emerged. Here the schools were not asked to be particularly creative, but to put into action pre-defined criteria to meet OfSTED requirements.

The test of an organisation's ability to self-organise arises when it has to quickly adapt to changing circumstances, or where creativity is needed. This may be at the macro-organisational level, or at various subsystem levels, where only parts of a school are in a creative development phase. To attain this, the organisational variables must possess a constant ability to re-configure (Conner 1998: 69). The image is that of a cyclist, whose 'balance' is a constantly fluctuating imbalance, or dynamic disequilibrium (Kelly 1994).

There is, however, a problem with this idea of alignment or coherence. Whilst the much-used analogy with the laser is attractive because of the power a laser can exert, a laser is actually static: it never develops into anything else. If we accept that the school needs to change as well as be aligned, we need to understand a mechanism whereby both things occur. If everything is totally aligned, we will never do anything any differently because there will be no variety in the system, which is a source of creativity as we have seen. Instead, as we saw in the three schools, movement into the future actually exhibits a moving into and out of coherence, and then back into a new coherence in a constantly changing process. At Beldene, for example, after the initial turbulent period there was a period of relative coherence as the school moved forward in one way (better results), but then a misalignment between leadership style and the staff's desire for more autonomy and involvement began to emerge. The process can be likened to the movement between consonance and dissonance in music. When the harmony is dissonant, it demands movement towards consonance, but to change from that consonance, it needs to move once more into dissonance.

Leadership as coherence building

It is from this position at the centre of a web of relationships that a central purpose of the leadership role arises. It is to maintain coherence amongst the internal variables of the school as they self-organise to adapt to, or co-evolve with, the demands of the environment. In the school, the interactions within and between areas of leadership, culture, skills, task and external

context need to be aligned for the school's actions to be coherent. In human systems, though, unlike light particles which all move into alignment simultaneously, the complexity of individuals means that coherence can occur in degrees. Beldene and Enderby schools were very effective, but clearly, there was not absolute coherence in either.

The position of the leader in this process is paradoxical. She is a part of the configuration of the system, but at the same time must be able to view that system as a whole, indicating a need to be able to step outside it: she is both in and out of the system at the same time, acting on events, but also taking a global view of the internal functioning of the system in relation to its environment. This balance is dynamic and self-organising and takes contingency theory further forward, in that the leader now has to view herself and her actions as part of the context, which is not simply something objective to act upon.

John recognised this but was unable to extricate himself sufficiently, and several other heads demonstrated the great involvement of their personal identity in the school. Some kinds of emotional attachment to the school's performance can lead to dysfunctional leadership performance, where heads fear allowing professional autonomy to staff, with the result that headship becomes more directive, as was suggested earlier, in response to accountabilities which are seen as personal.

To be able to take the helicopter view, heads need to acquire some degree of emotional detachment. Goleman (1996) has described the impact of emotional distress on mental clarity, and describes 'emotional intelligence' as 'the master aptitude'. Self-awareness, self-acceptance and managing feelings are essential components in developing this aptitude. Through such processes leaders may attain 'detached involvement', a paradoxical state where although one is concerned about the organisation, one can at the same time step outside it, a quality of mind rather than of personality (Bennis *et al.* 1994)

Because the practice of headship needs to co-vary with other situational variables, there is no one best way of headship. Heads' roles are multiple, flexible and complex, changing according to other variables, and the case studies demonstrated some ways in which the role needs to co-evolve with its environment. Kelly (1994) describes co-evolution as 'things . . . adapting to and creating each other, and at the same time weaving into one "whole system" . . . adapting to meet each other's needs' (p. 96). In this way, aspects of the head's role evolve as an emergent property of the whole system.

Assessing coherence

We have looked in this chapter at the way leaders need to 'juggle' the many variables in a situation, seeking coherence amongst them. I have also suggested that self-organising processes play a big part in this, but I do not

thereby mean to suggest that the leader is simply a passive bystander. The outcomes of the self-organising process depend on the quality of interactions that generate it, and the leader plays a crucial role in this even though unable to control it. We will develop this theme in later chapters.

For now, we can see that coherence building occurs at different levels. At an operational level, the head has to juggle variables in everyday situations in the face of conflicting demands, views and positions adopted by people. But it is also a concern at a strategic level, and this final section proposes a model for examining the strategic coherence of the school. Strategically, school leaders need to be aware of how coherent the school is in three dimensions:

1 Alignment with the needs of the environment within which the school operates. This relates to both local and national environments, and, if appropriate, international ones. Without this alignment it is hardly likely the school's work will lead to appropriate outcomes.
2 The visionary approach to leadership relies on aligning the values and vision of all stakeholders. The assumption is that once this vision is shared, people's actions and other processes will be directed by it and will therefore be in alignment with it. The leader therefore needs to work on alignment of vision and values, but also to see how effectively people's practices are putting those into action.
3 Internal structures and processes need to be aligned to carry out the school's purpose. For example, if innovation is seen as desirable, then structures and processes need to help, not hinder, the process.

I would now like to consider how we are to examine the alignment of the configuration of forces described above in relation to the external context the school finds itself in. In his examination of leadership, Handy (1993) says that for effective performance, the 'best fit' approach, an extension of contingency theory, can be used. The 'best fit' depends on four factors:

1 the leader – preferred style of leadership and personal characteristics;
2 the subordinates – their preferred style of leadership in the circumstances;
3 the task – objectives and technology associated with the work; and
4 the environment – organisational setting, the group and the importance of the task.

The 'best fit' of these four factors is deemed to be the right form of leadership, based upon a rough analysis of each on a scale from 'tight' to 'flexible.'

Handy was writing before ideas of self-organisation had come into management thinking, and it is interesting to note the way he addresses some aspects of this. For example, in a situation where the task is loosely defined and the

subordinates prefer to have more control over their work, but the leader prefers to structure the situation, he says, 'there will be a tendency for the three factors to move towards each other along the scale', or 'a powerful leader will often pull the subordinates and the task towards him [sic] as far as he can. In the process, he may breach the psychological contract . . . and impair the optimum performance of the task' (pp. 107–108). Note the implications of self-organisation here. First, there is the generalised idea that the factors will move towards each other. Second, there is the idea that human power can be used, but that the other aspects may then self-organise in a dysfunctional way. However, this does not prevent Handy from following conventional wisdom that the leader will adjust the three factors (excluding context) to achieve a fit. That is, the leader is in control, particularly of his or her own style, but also by redesigning or redefining the task or developing the work group. It seems to me that 'best fit' theory is a useful approach to understanding alignment in schools, and adapts readily to a complexity approach.

The approach by Robin Wood (2000) in *Managing Complexity* builds on the best fit approach to take in many more variables and to judge how they are aligned, within a 'wheel' framework. Any variable is 'scored' between a position of highly ordered to one at the edge of chaos. Wood claims the position on the wheel also shows the level of development of an organisation. One where all the scores are to the 'highly ordered' end of the scale is likely to have a tight command and control form, with little adaptive ability, while those at the other end of the scale represent an innovative capacity. Building on the approaches of both Handy and Wood, and linking with the fieldwork in Chapter 4, it is possible to look at alignment in a more structured and detailed way than simply aligning people with a vision. The next section, which explores nine factors that need to be aligned, includes all the factors so far mentioned and some additional ones.

The dimensions of alignment

A number of dimensions of alignment can be assessed (see Figure 5.2). Each has several strands, some of which may be conflicting, but eventually we need to come to a composite view of the area. You will see in Figure 5.2 that each dimension is represented by a line, moving from a highly stable position, through the edge of chaos area, which is shaded, to a truly chaotic position where there is no kind of order. I have tried to put a descriptor for each stage for each dimension, but this is a mere guide, since there can be many ways to describe the stages. Some of these are given in the text, but you will also doubtless think of others. However, it is my opinion that the act of considering these dimensions actually leads to a perception of your school's position. You can then evaluate this position in a range from 'closed' and 'stable' to 'open', 'highly evolved' and towards the 'edge of chaos' fairly

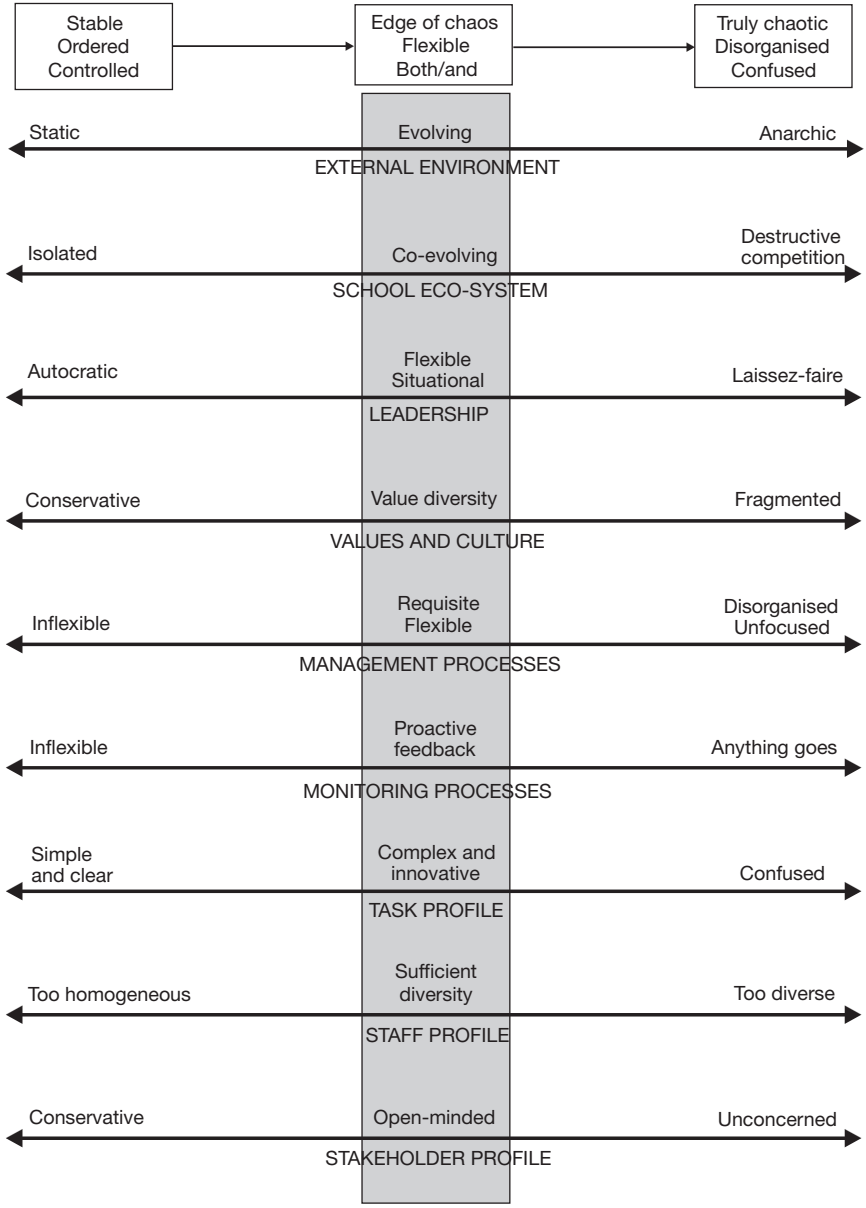

Figure 5.2 Dimensions of alignment

intuitively. Place a cross at the appropriate place on the line. The resulting diagram will demonstrate alignment visually. There is one caveat: our tendency to see what we want to see. To counter this, I suggest that a representative group of people be used for the exercise. Here are the dimensions.

The external environment

These are forces that are generally outside your sphere of influence, and are often detected through a 'PEST' analysis, which looks at political, economic, social and technological forces. For example, consider how stable the political policy context is as far as it impacts your school. How is new technology in schools affecting traditional ways of working? What are the social trends? How, for example, are lifestyles affecting what the school does? Finally, how stable are the economic dimensions of education? Is the environment stable or in a state of constant change?

The school's ecosystem

The ecosystem refers to other schools that are part of your environment. There is a complex series of relationships between these, as they collaborate and compete at the same time. As I will suggest later, within this network, schools co-evolve. Thus if one school cuts itself off from others, it will tend to fall behind current practice. To evaluate the position on the graph, you need to be aware how many schools locally are competing for the same pupils, and whether this is a stable situation or one that is likely to change. How rapidly are other groupings and alliances of schools forming and changing? How much does what you offer differ from what others offer? What are the success rates of other schools, and how are they changing? How quickly are other schools introducing new developments?

Leadership

Here you need to ask questions about leadership flexibility. What is the preferred style of the head? How much does he or she need to feel certainty, or how much can he or she cope with unpredictability and ambiguity? What confidence has the head in other staff? How distributed is leadership throughout the school? How much is participation in decision making welcomed? Tendencies towards distributed leadership and participation will be on the higher, more open, end of the scale.

School values and culture

There are potentially many areas that could be addressed in this category, but here are a few useful ones. Is the culture one of hierarchy and line

management, or one that works from networks of influence? Does the culture gravitate towards the conservative or the radical? How much divergence is there between the informal organisation and the formal one? How much does the culture value diversity?

Management processes

In this category we look for the degree of control that is exercised set against the degree of freedom allowed for emergent outcomes. Useful questions would be concerned with how tightly initiatives are controlled, or how much staff, either singly or in groups, are allowed to operate autonomously in a self-organising way. How much does the school encourage innovation, as opposed to having a focus on being safe and preventing mistakes? How much are strategic and operational decisions centralised, or devolved? Is new knowledge generated top-down, or does it emerge bottom-up?

Monitoring and evaluating

There has been strong concentration on this aspect of a school's work over the last few years. At their most useful, such measures provide feedback about performance, which enables learning. With so many stakeholders, and so many potential outcomes from schools, this aspect considers the width of monitoring, and its flexibility. Is monitoring creative and proactive? Does it go beyond test data to, for example, pupil satisfaction? Do staff welcome feedback as a tool for improvement, or do they see it as judgement? Is monitoring and evaluation a senior management activity, or everyone's concern? How much do the measures reflect strategic aims, such as parental satisfaction with the school or degree of research going on within the school, as well as operational ones such as financial efficiency and test results?

The task of the school

Because of all the variables above, the sense of overall task that schools perceive as necessary can differ considerably. If a pupil intake is generally very weak in basic social, linguistic and number skills, this will imply a different type of task to one that has highly developed basic skills. The former task might well be positioned at the closed end of the scale, where the latter may be at the open end in terms of methodology. The degree of flexibility you have in the task is also important. For example, how much of it is centrally determined, and what flexibility do you have in this? How much is determined by the outcomes of inspection? Does your school need to consolidate in terms of what others are doing, or to innovate and lead the way?

Staff profile

This involves an assessment of the overall profile of staff capacity and predisposition, and overall indicates a degree of confidence in staff to accomplish the task. There may be a perception of homogeneity, that all staff in general have high or low capacities, or the situation may be very heterogeneous, or localised into specific groups.

Your questions here need to address how competent staff feel, and their need for certainty or clarity as opposed to their comfort in working with ambiguous situations. You may also need to consider what they have been used to, their history. In terms of the school's knowledge management, you should also consider whether training and development concentrates on task-defined skills or general and psychological competencies. How diverse or homogeneous is the staff as a whole? Finally, you might consider how good staff are at coming up with innovative ideas.

Stakeholders

Stakeholders, such as governors, parents and local education authority, represent very potent forces acting on the school. In evaluating where they are placed on the matrix, you need to consider how each is disposed towards innovation in the school, and how much they see management processes as being devolved and democratic, or remaining tightly line-managed.

The scores on the grid show how aligned the various internal systems are with the external context by their positions. Factors at the closed end of the scale (the lower numbers) suggest security, stability, tight control and little adaptive ability. Those towards the edge of chaos show adaptability and potential for creativity and leading edge practice. Beyond that area, they are truly chaotic and disorganised.

Key points

1. The wider your responsibilities, the more complex is the web of interacting forces you are involved in, and the greater the need for 'juggling'.
2. The outcomes of the school are co-determined by many factors. The mix of these factors is the configuration of the school.
3. Each school has a unique configuration shaped by its internal context, leadership, task and external context.
4. 'Variety' in a system must be sufficient to match that in the environment.
5. The leader is part of the configuration.
6. The art of juggling is the maintenance of coherence in forces acting on the school outcomes. Coherence is a moving process. Schools can move into and out of coherence.

7 The school needs an ability to self-organise internally to adapt to changing external circumstances – that is, to reconfigure itself.
8 A central purpose of leadership is to maintain dynamic coherence among the internal variables of the school to co-evolve with the environment.
9 Because practice co-varies with other factors, there is no one best way of headship or leadership. Rather it is an emergent property of the system.
10 The need to promote coherence applies to both operational and strategic management.

Further reading

Alpha Leadership by Deering, Dilts and Russell (2002) has a good and very readable section on alignment, including the idea of requisite variety. It also contains very useful ways of working on alignment, as well as many other topics.

Robin Wood's *Managing Complexity* (2000) also has a good section on alignment, with examples of different alignments and what they mean.

Chapter 6

The art of steering

Before we progress, it will be useful to briefly summarise what I have suggested so far. In Chapter 1 I looked at the way in which we interpret and construct 'reality', at the way different paradigms arise and take on the appearance of 'common sense' as they become an automatic part of our presuppositions and how wisdom in management differs from pure knowledge or technique. In Chapter 2 I examined the existence of rationality in management, the limits to the rational approach and the source of that approach in our largely unexamined adoption of concepts drawn from classical science. I then proposed the adoption, alongside not instead of the classical approach, of a new paradigm that might help us understand more of the processes that occur in our own schools, and consequently give us more choice in our actions. This paradigm was based on systems thinking and complexity science, in general, and complex adaptive systems in particular, and I outlined some concepts in these areas briefly.

In Chapter 3 I examined the limits to the control we can exert on the forces that act in a school, suggesting such limits existed at both the operational and the strategic levels. I tried to show some of these forces in action as I examined the emergent self-organising effects in three schools in Chapter 4. Chapter 5 moved the argument of earlier chapters forward by showing how leaders are at the centre of a web of interacting forces, of which they are part, but that they have also to be able to see this configuration from the outside, and that working on coherence is a key feature of the leader's role. I also suggested that the complexity of this configuration of forces is irreducible. That is, to understand it and work with it you have to work with the whole thing and not some general model of it. For this reason, schools are unique, and generalised prescriptions may be inadequate.

If we cannot fully control a complex adaptive system, and if we have to keep all the forces involved in alignment, how then can we move the school forward? The answer suggested by some complexity theorists is that you so design the system that the emergent outcomes of the various interactions are optimal, though still not entirely predictable, of course. This means

steering a course between design and emergence, a course that has to be the right one for the school's particular situation.

This process brings together ideas of how things naturally evolve with design processes that use our human intelligence, and it sheds new light on how we can value and promote the creativity of our individual teachers. Designing for emergence necessitates an understanding of key elements of handling and working with complexity.

In his book *The Fifth Discipline*, Peter Senge (1990) puts the question that if you imagine your organisation as an ocean liner, and you are the leader, what is your role? When he has put this question to managers, he has had many answers. 'The captain' is, of course, the most common answer, but others are 'the navigator', who sets direction, 'the helmsman', actually controlling the direction, or 'the social director', making sure everyone is involved. You can see all these roles in headship, but the role people rarely think of is that of designer. As Senge says, the designer has a bigger influence than anybody else, but it is a neglected role, partly because it takes place somewhat behind the scenes and empowers others, who may take the limelight. As he says, the role of designer was recognised thousands of years ago by Lao Tzu, in his now famous statement that when a great leader has been at work, the people say 'we did it ourselves'.

Keeping with the same analogy, Hampden-Turner (1990) likened leadership to being a 'helmsman', where the tides of change mean you have to keep steering between dilemmas and tensions. I would like here to combine the two analogies to explore the way we need to steer a sound course between design and emergence. But first it is important to understand why both are necessary.

Stability and change

If we regard a school as a living system, then it will adopt many of the features of such a system that keep it alive. For example, all living systems operate in a way that is far from equilibrium, or stillness, as they use a flow of energy from outside to restore structures that are constantly dying. In our own bodies, cells are dying continuously and, via the food we eat, are being replaced continuously. In schools, staff and pupils leave the school, while new ones come in to replace them. In this way, living systems maintain their structure, or form, which persists throughout this constant change. They maintain their pattern of organisation. However, because such systems are coupled with their external environment, they react to that environment with structural changes. Because they do this according to their own nature and pattern of organisation, the outcome of this change can be unpredictable, but it will alter their future behaviour. Thus we can see that living systems are both maintaining their present form, and at the same time continually changing as they respond to environmental disturbances and internal

dynamics. Stability and change co-exist. If you think about a school you have known for some time, you will probably feel a sense of continuity – this is the same school – but you will also see that very many of the staff, probably the head as well, have changed as has the pupil body. You will also see, almost certainly, that school structures, staffing plans, practices and curriculum have all changed, in response to an external environment. The impression is one of paradox: at the same time we are staying the same and changing. I am still the same identity even though everything about me has changed. It is the strength of this persistent identity of a school that sometimes causes local education authorities to change its name in order to break people's historical perceptions of the school.

Design and emergence

There is a danger of taking the emergence analogy too far in its application to organisations, since in human organisations we have the mental capacity to think ahead and make goals and plan strategies: we can design structures. This contrasts to the rest of the living world, which is the result of emergence alone, and where there is no 'purpose involved, nor is there any "design" (Capra 2002). Human-designed structures always have a purpose and meaning.

However, this does not mean that self-organisation and emergence are irrelevant in human organisations, as we have seen earlier. What it does mean is that there is interplay between designed and emergent structures. The former can broadly be seen as the formal structures – policies, plans, roles – and the latter as the informal networks, shadow organisation and emergent organisation of various communities of practice. Capra sees design as the formal stability of the organisation, and the emergence as creativity. The two are interdependent.

Wenger (1998) sees this duality also, differentiating between the designed organisation, and the actual practice, embodied in communities of practice, that gives life to the organisation. Both are necessary, but it has to be remembered that, although designing policies and processes is important, it is the actual practice that produces results and outcomes. This recognition has important ramifications for organisational learning. As Wenger says, learning cannot be designed – rather it is a living experience of negotiating meaning. As he says, you can design policies and systems of accountability, but not the practices that will form a response to them, and similarly with roles, visions and processes. This line of reasoning leads to the conclusion that 'learning cannot be designed: it can only be designed *for* – that is, facilitated or frustrated' (p. 229). This goes for both pupil and organisational learning.

The idea that practice is a response to, not a causal outcome of, design is worth emphasising, because that leads to the realisation that we must include the opportunities embodied in the emergent into our designs. This in turn

means the design must not constrict such opportunities, and therefore a minimalist design or structure for learning may be appropriate. In organisations, this means that design must serve the potential for innovation embodied in its communities of practice.

In complexity theory terms, what Wenger is saying here is that we should design structures that enable self-organisation and organisational learning. Such structures will still produce a degree of persistent stability, but will facilitate the learning needed to move the organisation forward. In this sense, they are designed to steer rather than direct the organisation.

The degree to which the design of our schools enables these processes within its communities of practice, allied to the informal abilities of these communities to self-organise effectively, provides a measure of the organisation's overall capacity to self-organise in response to its environment or its own needs – its strategic fitness. This will be an important consideration when we come to look at establishing an appropriate balance between design and emergence in Chapter 8, and later chapters where we will look at design issues.

It is, however, not just in formal design that we respond to complex processes such as self-organisation. These processes are acting constantly in our everyday work, and decisions, actions and perceptions need to be attuned to them as we steer daily practice. To illustrate some aspects of this, I will use an account of how one head of a middle school, Janet, handled a problem in the English department of her school, and then make a commentary on how I see this process as steering. Although Janet was unaware of complexity theory, it is interesting to see how much her actions were based on it.

A problem in the English department

Janet encountered the problem when she was monitoring the work of two newly qualified teachers (NQTs) in her school, towards the end of their first year in teaching. Their planning showed they were not following the school's agreed medium-term plans in English. In their defence, they suggested that the formal planning and topics of work for this subject were not 'right', and their practice had therefore deviated informally, after they had discussed the matter with their year head, but not the head of English.

Janet began first of all to make 'discreet' inquiries. She found that whereas several other existing staff had individually had misgivings, culture and loyalty to their colleague had held them back from objecting, but now they felt 'something needed doing', and Janet realised this was now a problem that affected many more staff. This was not entirely a surprise to her. Less than a year ago she had overheard a member of staff remark 'Oh God, this theme again', and she realised on reflection that this had already planted a seed in her mind.

The problem had not been picked up in the formal system, but Janet felt that 'It's nobody's fault that it didn't come sooner, because I have a feeling that that's what happens in these situations – things don't fall neatly into a package . . . you're dealing with people, children, education in a very fluent, changeable situation.'

In dynamic and non-linear situations, she is saying, unpredictable problems can suddenly emerge from a number of interactions. In her analysis, five forces appeared to converge. First, new people had come in 'and that causes ripples and changes – as it should do . . . and these have come to a head very quickly'. However, it was not just new people: others had been dissatisfied but not expressing it. Second, the subject manager held a different view, and third, did not have the perception to realise others' concerns. Fourth, teachers wanted latitude – perhaps using guiding principles rather than prescriptions. Finally, a lesser cause was the demands of SATs, which some felt had not been properly considered.

Janet needed to act, but saw the risk of undermining a key player, the head of department, who might then become unproductive. She used the shadow organisation to investigate further – 'a head of year and staff whose opinion I respect' – and found many were unhappy. This also provided a difficulty in feeding back to the co-ordinator, admitting she had been talking, as it were, behind her back. She decided to call a meeting, but spoke to the head of department first. When the problem was put to her, she was surprised, and felt she had given people the chance to speak up. Janet suggested that perhaps politeness prevented people speaking out or that they did not want to speak out alone.

Janet realised that in the meeting, organisational defences would come into play and 'people will be frightened to say anything tonight, even though they may have said things to me', for fear of upsetting a colleague. She also realised that informal micro-political activity would go on before the meeting, and that power relationships would affect things where NQTs and new staff were faced with a senior member of staff. As a result, some might change their stance. She anticipated a 'battle', but saw that organisational conflict could be useful 'if handled correctly'.

The meeting

What Janet predicted happened. At the whole-school English meeting, it was clear that covert micro-political activity had been occurring, and also as she predicted, one person retracted their criticisms and aligned with the subject co-ordinator. The meeting was tense and uncomfortable. Janet 'knew a lot of the meeting would be taken up by rhetoric, and a re-settling . . . coming out differently from what it was before'. All she wanted, at this stage, was an outcome in a commitment to further planning.

Janet had thought carefully how to introduce the meeting, actually briefing the subject manager beforehand. Thus it was to be suggested there were a number of issues and concerns, and that wider issues such as the literacy hour meant it was an appropriate time to look at change. However, 'everybody there knew why the meeting was. This was all rhetoric and window dressing.' Janet stayed at the meeting for half an hour, listening to a 'monologue' by the subject co-ordinator 'really trying to cover her tracks and to make people feel uncomfortable'.

Janet, though angry at this monologue and display of power, refrained from intervention. By the time she left, people were 'coming in and saying things'. The meeting became more positive as people contributed ideas and suggestions, and plans were put in place for a further meeting. Janet was pleased with the report back next day – 'we had got over that initial jump which is always the hardest bit'.

Follow-up

Now that change was at least on the agenda, Janet wanted to ensure that the momentum was kept up. She ensured certain staff were released from a year group meeting scheduled for the same time as the subsequent English meeting. Again, this was to ensure that the dynamics of self-organisation weren't stifled, knowing that the subject manager preferred small groups and was happy to carry on without this section of the school being present. She then determined she would have another informal meeting – when the climate was right – with the subject leader to chase progress and implementation. However, when asked, Janet admitted she did not know quite what would happen. 'No, no. That's for them. I want to see it explained to me, and be sure it's right, but I will trust their professional judgement.' Finally, Janet hoped that the subject manager would have learned from the episode, a clear reference to a change of mental model through double–loop learning.

No one knew precisely *what* would emerge. What was important for the head was to create the context for emergence to take place, nudging the system to do so, and being able to tolerate the uncertainty and ambiguity this would create. The many variables involved in this episode, and their sometimes complex interactions, such as divided loyalties, were too complex to resolve by reasoning or by unilateral decisions.

Juggling variables

Janet was 'juggling' a number of variables: she was thinking about the subject manager, her credibility, feelings and development; the concerns of other staff for change, and more opportunity to be involved in it; her own accountability for what happens in the school; and the need for all of the staff to work in harmony in the future. In deciding what to do, she had to steer a

course that satisfied all these as much as possible if she was to maintain coherence in the school. After each stage of the drama I questioned her about what she had been thinking, and why she adopted certain strategies.

She felt she needed a judicious mixture of both tact and 'directness or bluntness' in dealing with the head of department, as well as the courage and honesty to address the issue. Although the 'directness' was essential, it was carried out in private, an action common in the old management maxim of 'blame in private, praise in public', though this was not exactly 'blame'. The tact was demonstrated at the introduction to the meeting, designed to spare the subject manager's feelings and still support her position, even if everyone realised it was rhetoric: the formalities were important. Further into the meeting, Janet did not intervene, as she intuitively realised that intervention through formal power would affect the process of self-organisation, which was in its early stages. This judgement was borne out, since by the time she left the meeting, it was developing more positively and people were beginning to speak out.

This can be seen as an interplay between factors in the internal context of the school. There are tensions between freedom, control and participation in curriculum decisions, and staff's multiple visions of strategy and objectives. There is also the head's own concern for overall accountability, vision of how the problem could be resolved, and possession of requisite mental variety to harness the processes involved.

Janet also demonstrated the ability to track many of the variables operating in the organisation at the same time and inter-relate them, suggesting that both rationally and intuitively, she had a way of tracking variables and seeing where their combined effect was leading, thus enabling her to nudge them to produce the trajectory needed. This is a skill that enters into the wisdom category I outlined in Chapter 1, and is not a rational, sequential process, but a holistic perception.

The many variables and their interactions involved in this episode were too complex to resolve by reasoning or unilateral decisions. In neural network terms, the strengths of all the multiple connections had to be allowed to adjust until the system settled into a solution, which could not be known in advance.

Organisational dynamics and the shadow system

Janet was clear that an important skill in helping such issues to resolve is 'nous' or 'craftiness' – 'keeping your ear to the ground, having your finger on the pulse type of situation, controlling it from a distance . . . speaking to key people, knowing who the key people are, knowing the dynamics'.

This reveals a number of points about Janet's understanding. The 'pulse' metaphor, common though it may be, signifies that the life of the school flows through channels other than the formal, otherwise they would be clear.

This is what Stacey (1996) has termed the shadow system. There are several other processes revealed in the action. First, clearly the incident was rife with micro-political activity, some overt, with vested interests of formally held positions such as that of the subject manager, but mainly covert ('meetings in corners'). Second, some covert politics could be reasonably deduced as emanating from the subject manager's fear of failing or being challenged, thus setting up defences. Third, such fears arise from processes where there are contradictions to the shared mental models and apparently common culture. Fourth, these processes are interacting with, and influencing, an apparent rational process of decision-making operating on a formal level.

Nudging the system

Understanding these informal dynamics means that the leader can intervene at selective points, her 'minor' inputs influencing the flow by using the dynamics. 'Controlling from a distance' meant nudging key people to attend the meeting and being present herself. She was adamant that this was not manipulation – she did not lean on or attempt to persuade people, but 'if I hadn't done those things . . . the meeting could have had – not could, *would* have had – a very different outcome'.

It was the symmetry-breaking activity of the NQTs that rapidly escalated through amplifying feedback, self-organising in the shadow system until it reached a critical mass. What we then see is the system settling into a solution, rather than being directed into one. Dynamically, this train of processes was stimulated by a fluctuation in the system caused by small actions of individuals. These increased through positive feedback processes, gathering support and momentum leading to a state of bounded instability at the edge of chaos, where many fluctuations of opinion co-existed. However, this state could lead to the emergence of effective new forms only if the formal power of two key individuals, the head and the head of department, was suppressed in order to allow the complexity to develop, and an unknown emergent state to evolve.

Design and emergence

Of course, this is micro-political activity of a subtle kind, but the key is that Janet ensured a context where self-organisation could occur without being dominated by any one power – either her own or that of the subject manager. Clearly, she allowed conflicts and contradictions to surface (Wheatley 1992) rather than trying to suppress them for the sake of an apparent equilibrium. As she said, 'I don't think conflict is necessarily bad, you know. It's just how we handle it.' In structuring the process in this way, both formally and informally, she had designed a system to allow self-organisation to occur in a functional rather than a dysfunctional way.

To allow self-organisation to take place, Janet set an ambiguous or unclear challenge, using such phrases as to 'get it right' without defining any of the terms, and thus promoting no single vision of what was to be done. No one knew exactly what 'getting it right' would look like. This can be seen as a 'strange' or chaotic attractor, with a slightly different interpretation in each person's mind of what 'getting it right' would look like. This was one part of her design for emergence.

She also used both formal and shadow systems to design the setting for self-organisation, understanding and recognising individual mental models, group and organisational dynamics, intervening selectively by nudging the system into new directions. However, the resolution of the English problem demonstrated that this part of the school organisation still did not possess the qualities of openness and trust that would allow easy and frequent self-organisation in the formal system. There were still too many organisational defence mechanisms and lack of respect for others' mental models for this to occur without covert micro-political processes.

Initially, two individual forces challenged the cultural forces of the status quo. As political forces developed, 'tendencies' which existed in some staff, but had not been demonstrated yet, became active as they saw their voice could be heard. Finally, these forces co-evolved into a new coherence. Although the incident might be fruitfully explored using power, politics and culture metaphors, each would be but a partial view. In embracing these and the dynamical properties of the incident, a complexity metaphor offers a wider understanding.

Janet's handling of this problem shows the way she used complex processes in order to solve a complex problem. In doing so, she did not attempt to use her power to define a solution that everyone must adopt, but instead used it to make sure the context for effective self-organisation was in place. To some extent this is risky, because the final outcome – what will emerge – is unknown. There are, however, other complexity management principles that are not shown in this particular situation she faced. We can now look at two of those, and illustrate them from another case study.

Using attractors

In Chapter 3 I explained the idea of an attractor as a state into which a dynamic system such as a school organisation is drawn. It is the destination of the school according to the track it is following. We also saw in that chapter that any sequence of actions can be leading at any time to several unintended consequences. These are other attractors.

At Beldene, for example, John set up a clear vision and culture of achievement, and this was embodied in the strategic drive to focus, by whatever means possible, on increasing the number of A to C grades in the GCSE

examination. This target acted as an attractor, and as a result many practices were set up to achieve it:

> He's made the objectives clear to staff. He's never pussyfooted around. [He's] said 'our main priority is raising achievement and we are measuring achievement through performance at GCSE, at A level and at GNVQ'. . . . His brief to me is quite simple: you raise the percentage of merit and distinction, even if fewer students complete the course. So that's quite clear.

Interestingly, as some of these measures began to affect results for the better, systemic factors then began to operate. At first, these were positive, as shown in Figure 6.1.

As the number of A–C grades rose, staff and pupils took greater pride in their school. There was also an increase in lower-grade success, behaviour improved and so did enrolment in the school, to such an extent that it was vastly oversubscribed. Thus we can see that a simple target, seen as an attractor, and the actions set up to achieve it, actually mean that those actions are also leading to other attractors as well. This of course shows how one action can lead to multiple outcomes in a complex system, reinforcing the fact that in a complex system, you cannot do just one thing.

Setting up 'attractors' is, then, one way of structuring or designing for emergence, but it is clear that there is also a need to monitor to detect early any unwanted attractors that also arise as a result of the strategies in use. If a target is also to become an attractor, the way it is worded and presented can be crucial. Much of this will be to do with the leader's choice of words and the way they establish meaning in people's minds and, as Lissack and Roos (1999) suggest, the way this fits the audience and 'catch[es] their wave'. It can also be dependent on the degree of precision embodied in the target.

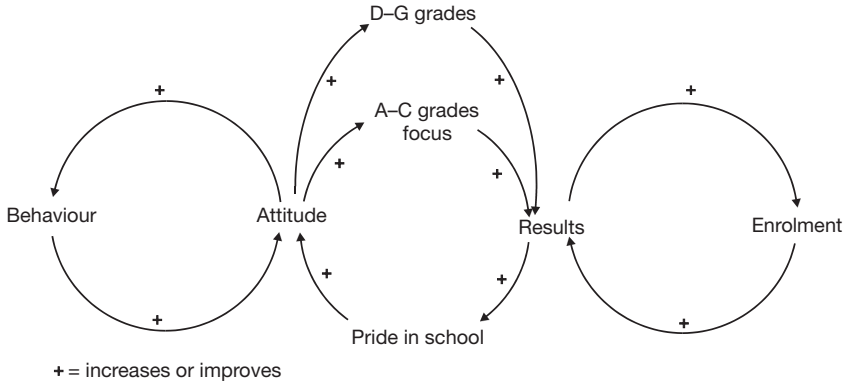

Figure 6.1 Positive unintended attractors at Beldene

One that is absolutely precise and focused may exclude many people and emergent outcomes, whereas one that is more generally expressed will motivate more people. A simple and somewhat exaggerated example shows this effect. If a head talks about 'educating our children' then all the staff should be drawn to this attractor. Because there will be many interpretations of what this means, the actual destination will not be precise, but will be within a range of outcomes which define 'educate'. If, on the other hand, the target is to cater for pupils with severe behavioural problems within the mainstream classroom – a much more precise target – then there may be different views about the actual validity of the target and the target will not be a strong attractor. Further, this last target lessens the possibility for emergent outcomes of a creative nature, whereas the first sets a context for them. Targets that are sufficiently precise, but also sufficiently general, are therefore useful for encouraging creativity in the organisation, both keeping general direction and encouraging emergence.

Shaping strategy

Another aspect of the way managers steer shows up in the emergent, rather than planned, aspects of strategy. Effective leaders show opportunism. This means they are able to keep many agendas – or trajectories of the organisation – in mind at the same time, and fit sometimes unexpected events into them.

John's day-to-day activities demonstrated this kind of ability. When, for example, he received a telephone call from a member of the House of Lords who revealed he was an old student of the school and would like to look around, John saw this – almost immediately – as a way of moving several school agendas forward, and exploited it. First, it was part of his agenda to create an achievement culture. An old student who had been made a lord would act as a role model. Second, he was asked to talk to students about working hard and getting on. Third, he could address an A level politics group about his work in the House of Lords; and finally, John would call the local newspaper to give publicity to this event, and, of course, to the school.

Peter also showed this capacity to use chance and opportunities. On one occasion he decided to telephone the LEA inspector for information technology to brief him about developments with the contractors who were installing the new ICT equipment. The inspector agreed to come to the school to talk to him. Afterwards Peter said he was pleased the inspector was coming, in order to keep the school 'up there' in IT.

The results of this telephone call were surprising. First, the inspector telephoned back to offer the school a video-conferencing unit and a £900 course for a member of staff. Despite not knowing what one was, Peter agreed. Second, when the inspector visited, he was impressed and said he wanted the school to be a lead school in future planned developments into new and emerging technologies. He would like them to trial new developments and

would install various items such as Internet features to save costs. Later that morning, showing prospective parents round the school, Peter was already stressing the school's involvement in ICT initiatives. As he said, 'it took me four seconds to make that call! – a small seed yielding large results'.

Pursuing emergent strategy was a very strong feature of Peter's leadership, and one that he fully recognised. He believed that 'the ideas and the real engine' for starting the strategy process are often informal: 'I must say, the best ideas and the best developments have come from meetings on corridors, or bumping into somebody, or informal chats in the staffroom' (Peter).

This process does not only involve Peter. He recognises that there is an informal strategic process going on continually, where 'groups meet to plan and do things' outside the remit of the school development plan. Sometimes these developments find their way on to the plan, sometimes not. Much early strategic development actually occurs within the shadow system. As one teacher at Enderby said, 'There's more information passed about at the end of a meeting when the pens have gone down . . . more ideas thrown around at that point on the way to the staffroom, or to the cars. That's when ideas start.'

One graphic example of shadow system dynamics was recounted by the Senco (Special Educational Needs Co-ordinator) in the school. She had perceived a year earlier that there was a problem with reading that had not been picked up, and that the way it was structured needed examining. However, the time was not ripe to move it on 'and I just had to keep my mouth shut all last year'. Then two things happened. First the staff agreed generally that they needed a spelling policy, which was one way in, and 'Then we got a whole lot of new people in year five . . . so we've got a core of people who are thinking the same way.' At the same time she was able to 'grab' surplus class reading books and begin 'levelling' them before sharing them out, and now that there was a critical mass of people behind the idea of a new reading policy, she was able to start developing one. As she said, the interactions leading to these developments occurred 'on the telephone, when I ring them up at home . . . in the staffroom', or at 'breakfast meetings in the café'. All of this was informal, and neither the Head nor the Head of English knew anything about it, 'so now I've got to take it to the Head of English, because it's gone so far, if you like, behind the scenes' (Senco).

Many strategies emerge from small happenings, often reinforcing or crystallising ideas that were already germinating: that is, the ground was already fertile. For example, an NQT passing through the office happened to mention that a new parent had said how useful an early informal meeting with staff would be: 'And it's been on my mind for months, has this. . . . Just that parent saying that . . . led me to think about . . . a coffee morning, some sort of open afternoon when they first come . . . lots of my developments over the years have been happening that way' (Peter).

It can be seen here that a small single event can be the trigger for producing strategy, especially where there had already been a latent readiness. In this way strategy is shaped as it goes, adapting to circumstances but in line with values.

In this chapter we have looked at the need to harness the natural tendencies that complex organisations like schools have towards self-organising processes, of which the emergent outcomes are not fully predictable. We have seen that to do this, steering a course between design and emergence is desirable. We have seen that self-organising processes can be 'nudged' but not controlled, and the importance of chance events, and happenings within the shadow system, which can shape strategy. In Chapter 7 we will examine in more detail the role of the leader in such circumstances.

Key points

1 In complex systems, you need to steer a course between design and emergence.
2 Organisational learning or innovation is a process that cannot be controlled by design: it can only be designed for. Our designs can help or hinder the process.
3 What people actually do is a *response* to the design.
4 Designed structures need to take account of and enable self-organising processes.
5 Leaders can 'nudge' these processes, but not dictate them.
6 The leader's view of the whole, the 'helicopter' view, means the ability to track the interactions between many related variables.
7 Putting attractors into place can influence emergent behaviour and creativity. However, a target need not necessarily become an attractor.
8 A critical balance between precise and artfully vague wording of targets may be what enables creativity.
9 Be aware that actions may be moving your school towards a number of different attractors.
10 Strategies are often influenced by chance events and opportunism, being shaped as they go, and this can take place in the shadow system.

Chapter 7

Be a paradoxical leader

In previous chapters I have tried to show how new frames of thinking in terms of complex processes and living systems increase our understanding of the way our schools actually operate. In this chapter I will continue the theme of 'steering' and look at the way these frames influence management and leadership, particularly as they affect a school's possibility of being creative and innovative. The emphasis will be on how emergent processes can be 'managed', and the way this leads to a number of leadership paradoxes.

Adopting the right psychological frame

Our practice of leadership becomes much more natural and spontaneous if it arises from deep in our understanding rather than from a set of behavioural prescriptions we have learned. L. Michael Hall (2001) has written extensively about the way we understand experiences so that they fit into frames we have, built on our past experiences or cultural expectations. They are usually hidden from consciousness but act as attractors, giving meaning to events, and making us tend to focus on those aspects of experience that confirm them. At a simple level, they can be regarded as the 'rules of the game'. Frames create and direct our focus, and therefore govern what we perceive. They are deep schemata in our minds, which affect our values and ideas of meaning. It follows that frames constrain our thinking, and conversely, if we change the frame, the meaning of our experience changes.

The frame set by a complex living systems perspective is very different from one set by a social engineering viewpoint. Pascale and colleagues (2000) describe the latter as the dominant twentieth-century paradigm for management. It represents machine-model cause and effect thinking, shown in such assumptions as the leader being the head, with all the intelligence, and the organisation being the body; the idea of predictable change that is planned and controlled; and 'cascading' intention – initiative flowing from top down, sometimes with a 'veneer of participation'. Pascale regards this approach as so pervasive it is almost invisible: in framing terms, the frame has become an automatic presupposition. Engineering works to achieve convergence with management's view and purpose.

Framing the school as a living system brings a very different perspective. It recognises that self-organising processes are a gateway to innovation, and that change evolves through such processes. Since these cannot be controlled, as the engineering model would suggest, the accent has to be on design for emergence. We need to so design the processes and practices in the school that the emergent outcomes are desirable ones, even though we may not be able to predict them precisely beforehand. Working out of this frame also transforms our approach to people, alignment, 'unfreezing' and commitment. Our new frame, then, is one of living system rather than mechanical system, design rather than engineering, and emergence rather than convergence.

Finally, we need to recognise that with such a frame, we have abandoned the idea of expecting ever-increasing degrees of certainty in what we are doing. Such an idea leads to our feeling that as leaders we should be in full and precise control. As I suggested earlier, this has always been something of a myth, and because it was unachievable, it could also be a great source of self-doubt and stress. However, the move from controlling and engineering, to design for emergence, inevitably involves some 'letting go'. And this increases the paradoxical nature of the leader's work. Another frame we must adopt, then, is to accept paradox as a normal state, to which we will turn shortly. First, however, I want to introduce a second strand that goes with it, that of creativity in the school.

The source of creativity in organisations

In Chapter 1 I suggested that leadership to enable the creativity of people in the school was important, particularly in today's climate. From subsequent chapters we can now see more clearly why this is important. First, it is to ensure the school has requisite complexity to meet the demands of its environment. Second, it is to overcome problems that ensue from a single source of leadership, as we saw in Chapter 6. In simple terms, the school is limited to the vision and creativity of the leader alone. In contrast, promoting complexity of a right level can enhance creativity by enhancing the range of responses of which the school is capable.

Research into creativity has generally focused on the four Ps – process, person, product and place (Tardif and Sternberg 1988). If we are to encourage creativity in schools, we need as leaders to facilitate the process. Tardif and Sternberg's review of what is known about creativity shows a somewhat mixed picture. Some have viewed the process as existing in a single person at a single point in time – a suggestion perhaps of sudden insight. An alternative view is that creativity exists in a larger system of social networks of which the individual is only one part. Some say creativity is intentional, an active search for gaps in knowledge, while others regard it as an outcome of random variations, which therefore relies on chance.

Two fairly well agreed characteristics of creative processes are that they involve some sense of tension, and that the unconscious mind is an important feature.

From a complexity theory viewpoint, creativity occurs most readily at the edge of chaos, where new relationships, connections and mental models are most likely to arise. Capra (2002) tells us that emergence of novelty occurs when a system, be it two people or a whole organisation, is at some critical point of instability. This may in fact be only a small disturbance to the system, which is then amplified by feedback loops. In a school, this may be simply a comment made by someone. It may even be inconsequential, but to someone else in the organisation, it has some meaning and begins to circulate through the school, getting amplified as it goes. At a certain level, a point of instability is reached and there is a problem integrating this new information into the existing order of beliefs or procedures. A situation of doubt and uncertainty arises; this is the 'edge of chaos', and from it a new order, based around new meaning, emerges. This is essentially the process that occurred when Janet 'addressed' the English problem in Chapter 6. She had overheard some comment about 'Oh, not that theme again!' and over time this unrest magnified until the meeting, where a new order emerged.

Capra (2002) defines the stages in this process:

1 An openness in the organisation, which means a willingness to be disturbed. Without Janet's willingness to be disturbed by what she saw, nothing would have happened other than behind-the-scenes grumbling. Openness is generally an indicator of the organisation's flexibility and learning capabilities.
2 An active network of communications to amplify the triggering effect.
3 A point of instability, marked by tension, uncertainty, a sense of crisis and strong emotions. This was the point reached at Beldene soon after John had become head. At this stage, there are two possibilities: the system may break down, or break through to a new state – an experience of creativity.

Of course, experiences of crisis and emergence do not have to be extreme, but are typified by some degree of uncertainty and discomfort leading to tension and, often suddenly, the emergence of something new. As I suggested earlier, the configuration of factors in a school makes it unique. Capra supports this when he warns that emergent solutions are created within a particular context, a particular organisational culture. There is therefore a great problem in trying to transfer them since they cannot also transfer the context of meaning.

The process of self-organisation at the edge of chaos may occur in the individual mind, or within the relationships in the organisation. Stacey *et al.* (2000) consider the relationships between members of an organisation

to be what transform an organisation. Conversation marked by constant differences of interpretation, is where people create meaning and their future through their interactions. Fonseca (2002) also argues that innovation emerges from messy processes of people relating to each other. As people relate through everyday conversations, new themes and ideas emerge through a process of self-organisation that can be neither controlled nor predicted. He sees organisational life as a social practice based on patterns of individuals dealing with each other. Their actions – the practices of the organisation – are formed by these interactions, but at the same time these practices are the medium within which the interactions take place. We are being formed by and forming our institutional practices at one and the same time, and this goes some way to understanding how individual creativity is helped by social processes. It is through this process that our knowledge and meaning emerge.

For example, we might imagine a group of teachers in one school talking about the way the 'school' teaches literacy. Over time, they create a series of ideas, drawn from various sources, which find their way into the school's practice. This then becomes the school's new practice. It is the process that occurs with most top-down initiatives, as communities of practice gradually change them. It is important to note that 'conversation' in this context includes not only verbal interaction but many aspects of communication, such as policies, directives and so on which are other ways of 'talking' to each other.

Creative ideas can arise in the mind of an individual, who sees an innovative idea that will fit a perceived need. This is usually a planned innovation, and may lead directly to a strategic plan for adoption. Other creative ideas from individuals may have to fight for survival against other ideas in a Darwinian selection process. The point is that there are several ways for innovation to arise, and creativity can happen at several levels: all creativity does not imply double–loop learning.

For our purposes as leaders, though, Fonseca's point that people form and are formed by their interactions with others means that promoting effective relational interactions will facilitate creativity. We need to enable free interaction between our people, ensure there is sufficient diversity amongst them and that they are strongly interconnected. We will examine relational interaction in more detail in Chapter 8.

Designing for emergence

In Chapter 3 we looked at the way managers were in control yet not in control because of the essential self-organising processes that enabled communities of practice to actually get their work done. This paradoxical situation shows us that both design and emergence are important in organ-

isations. Rarely in our schools do we recognise this: we do not design for emergence. In contrast, Pascale *et al.* (2000) tell us how the US army has adopted the ideas of self-organisation and emergence to do just this as it copes with the complexities of war in the information age. There are two keys to this process: devolution of decision making to the lowest possible level, but within the framework of 'commander's intent'. Commander's intent defines what they want to happen. How it happens is dependent on combat units who are encouraged to read the situation on the ground, improvise and exploit opportunities. To facilitate the process, the army has taken steps to improve the quality of the 'nodes', via selection and training, and of their capacity to interconnect (via high-tech electronics).

Wenger (1998), as we saw in the last chapter, differentiates between the designed organisation and the emergent 'lived practice' which actually produces the results. Policies and documents do not produce the results in school, but the interactions between teachers and pupils do. He sees this practice as a response to, not a result of, design. This will be familiar to many of us, as we see our policies, structures and set procedures being modified before our eyes by those interpreting them. In training sessions following set 'scripts', the trainers who get the best evaluations are those who 'tweak' the script and improvise in response to what is happening in the training room. As Wenger says, 'The point of design is to make organisations ready for the emergent by serving the inventiveness of practice and the potential for innovation inherent in its emergent structure' (p. 245).

There is one final point – a very important one – about the need to design for emergence. It concerns the constantly changing nature of individuals and the organisation. As we learn, it changes who we are, however imperceptibly, and this applies also to the organisation as it learns. It changes our ability to participate in our community. Slowly, perhaps, we and the organisation are developing different identities, to which our designs, developed for different people and a different organisation, become inappropriate.

Structures and processes for emergence

Distributed intelligence

If the organisation needs to face challenges of adapting to external requirements or of generating creativity, it is important to be able to tap into its collective intelligence. It has long been said that 'two heads are better than one', an intuitive realisation of the law of requisite variety. The collective intelligence of the school resides in its people – teaching staff, non-teaching staff, and students. Seen as a network, these are the 'nodes' in the network. Each of these nodes has some difference from the others, since people have different histories, beliefs or culture, and each node is connected to others by virtue of relationships and communication. The strength and resilience

of a complex adaptive system lies in its distributed intelligence, which in turn resides in:

(a) the number and strength of the nodes (strong capability);
(b) the richness of the connections between them (complex communication and interaction); and
(c) the diversity amongst them (variety of skill, viewpoint, knowledge).

This can, of course, be compared to the human brain, with its millions of neurons and rich interconnections between them, and where learning and intelligence are associated with patterns of communication between the neurons.

The first aspect of designing for emergence, then, concerns building this distributed intelligence and using it to evolve new learning. The first essential is to build diversity into the nodes, to build requisite variety into the system. Building diversity into the staff profile increases the variety in the system, and it therefore has more choices about what to do either to accommodate changing external requirements, or in response to its own concerns to improve provision. It increases the school's ability to adapt either to the external environment or to its own internal needs. Used well, such variety provides many ways of seeing the world, and hence of developing strategy.

Leaders therefore need first of all to fully recognise the diversity that will already exist in the school, and use it. Much of this diversity tends to remain unexpressed by people who feel themselves thwarted by dominant mindsets (Maruyama 1994), and therefore adopt a passive role. Leaders at all levels need to bring out such concealed diversity, encourage divergent thinking in formal meetings, and to be sensitive to its expression in the shadow system.

This insight also has implications for making appointments. Rather than simply replacing the job of a teacher who has left, we should look at what other diversity candidates may offer. If we are too precise with job descriptions and personnel specifications, then we may by default exclude some diversity that would have been beneficial, but of which we were unaware. We must also beware of the 'fitting-in with our team' feeling that often is the deciding factor – really based on the idea that our comfort zone will not be threatened.

Leaders can increase the number and quality of connections by bringing together, perhaps for specific projects, members from across different sections of a school and encouraging social connections. This can be a problem in a large school. At Beldene, the sense of wholeness had fragmented, as departments kept very much to themselves, while at the same time, there was a separate pastoral structure. Even at a social level, the staffroom was rarely used. Such fragmentation can also be seen in smaller primary schools, where there may seem a fragmentation between key stages. Even here, a year 1 teacher may be quite unaware of what happens at year 6.

As with the US army, first-class training and development, in personal skills as well as teaching skills, can increase 'quality', and 'big picture' information will enable self-organising actions through relationships, as the quality of interconnection strengthens. Chapter 8 will look at this important area in more detail.

Redundancy and inefficiency

Another insight from complexity science is that it is 'massive' redundancy that allows life to survive at the edge of chaos. As Stacey (2000) tells us, 'some kind of mess, or inefficiency, is required to enable faster discovery, and other kinds of mess, redundancy, are required to be able to survive that disorder' (p. 293).

Thus there needs to be some 'slack' in the system, some looseness to allow the school to operate at the creative edge of chaos. There needs to be time to talk – staffroom and corridor talk, and the parts of courses where teachers are not 'on task' provide important opportunities for self-organisation.

Redundancy is about reserve resources – they are not redundant once they are needed. This makes the big drive in recent years to do just the opposite – i.e. remove any redundancy from schools – problematic. In teacher talk and action, we need to be prepared to allow redundancy. Conversations will not always be to the point and focused, people will not always be 'on task', but it is from this randomness that new ideas can emerge.

Balance design and emergence

We have in education a mindset at the moment that tries to tie everything down in precise detail. This mindset is demonstrated in the ever-closer detail of lesson and curriculum plans and methods, job descriptions and school development plans. Each level of detail closes down opportunities for emergence. For example, most job descriptions define what a person is expected to do, and also, to a large extent, the ways in which it should be done. To follow such a description to the letter would mean nothing would change – we would always do things in the same way. Of course, in practice we know this doesn't happen, but only because some people use initiative to wander from the prescribed path. We need, then, to maintain a balance between tying things down precisely, and leaving them open to interpretation. One way some do this is by keeping the 'rules' to a minimum.

Simple rules

Computer simulations have shown how very complex, emergent but orderly and coherent behaviour can emerge from a minimal set of rules. One such simulation ('Boids') shows how complex flocking behaviour of birds simply

emerges from each 'boid' following three simple rules of flight. The 'boids' are autonomous units, guided by these rules. If an obstacle is reached, each 'boid' makes up its own mind according to the rules and the whole flock successfully steers around the obstacle.

If we keep the rules in our schools minimal, then we are encouraging emergent and creative behaviour, but there will also be sufficient order. Morgan (1997) explains how 'the old bureaucratic mindset' ends up with detailed rules, targets and anticipated results that create a structure of accountability and over-control that negates redundancy and innovation. The employment of 'minimum specs' avoids the danger of total anarchy, but also of over-centralisation. Thus managers should define no more than is absolutely necessary to set up an initiative. Heads and other leaders therefore need to balance closely the ratio between design and emergence they feel is appropriate to any particular area. For example, a new head of department may feel the need for a well-structured job description, but after a year or two might be more effective with a less specific one.

Anticipation

A vital skill for leaders is to develop the capacity to detect what is emerging in the environment, so that they are poised to respond if necessary. Staff at Enderby felt reassured, for example, that Peter 'had his ear to the ground'. He networked well, and was consequently ready for the constant changes coming their way, before they became urgent and pressured.

However, it would be difficult for the head alone to be alert to all the faint signals of change. If the school has built an effective network of distributed intelligence, this can be drawn upon to detect what is happening nationally – in subjects, for example – and locally, for example in other schools, and in the neighbourhood. I remember in my own school a member of the staff talking in the staffroom about the 'fantastic' open evening a rival school had put on. By the time this reached me, it was too late for us to do anything different, and in fact we lost intake that year. Sure enough, the following year we reversed the process. Deering *et al.* (2002) refer to the process as 'skin-driven' management. In the human body, our skin is replete with sensors. In the organisation, the 'skin' is the people at the customer interface. In schools, the students are also part of the 'skin'.

Equilibrium and edge of chaos states

'Equilibrium is death' is the title of one chapter in *Surfing the Edge of Chaos* (Pascale *et al.* 2000). The reason for this is that the life processes in living beings have to operate far from equilibrium to keep up the constant transfer of energy that typifies life. Once these processes become static, death ensues.

There is some similarity in organisations. We probably all know of schools that have moved too much towards equilibrium. Such schools are happy to

continue practices that have existed there for a long time, and any change is minor. Schools described as 'coasting' probably fall into this category, as, often, do failing schools. What has happened, of course, is that as the outside world moves relentlessly on, they stay still, and little by little their strategic responses become inadequate – a process known as 'strategic incremental drift' (Stacey 1996). Strategic drift can also happen in an individual department or an individual teacher.

The problem is that equilibrium often looks like an advantage rather than a threat. It is often hidden in strongly shared values, a very stable, well-knit social system or an efficiently operating work system – 'a well-oiled machine'. Together they point to very strong 'organisational fit'. A sense of equilibrium might well be found in some of the things we hold dear in schools – a clear vision, strong values and internal consistency and agreement.

An alternative is to keep the organisation 'at the edge of chaos', the border state described earlier, where stability and instability co-exist. Neither force can be removed, but their co-existence gives rise to emergent outcomes. This edge of chaos state is the optimum state for creative outcomes, where the system is at its most ready to move in new directions. Stewart (1989) has used the analogy of the tennis player receiving service. Just prior to the serve, the player's feet move in an apparently random way, rather than standing still or just shuffling alternately backward or forward. The more random movement helps the player to be ready to move in any direction in response to the serve.

Leaders should beware states of equilibrium in the school, though relative states of equilibrium are, in realistic terms, necessary at times, even if they are difficult to hold in such a turbulent environment. To be kept perpetually at the edge of chaos might well be unsustainable. It is important, then, for leaders to know when and how to balance the two. However, if the equilibrium state becomes too entrenched, the school will be in real danger of incremental drift. In this case leaders must move the school, the department, the section of the school to the edge of chaos where new creativity may emerge. They can do this by creating a sense of disequilibrium. There are many triggers for this. For example, Jean in Chapter 2 found that sending selected staff on specific courses led to an unsettled feeling as they realised from staff in other schools that they had been left behind. This led to dissatisfaction with what they were presently doing, and then to new creative ideas. Using relevant hard data showing the school's performance against similar schools can also lead to a sense of disequilibrium.

Let go

The final phase of managing from a complexity viewpoint is letting go once the design is in place. This is possibly the most difficult aspect, and the temptation to micro-manage can be great. The process needs patience to allow

the evolution to take its course. It means not becoming obsessed at the thought of 'redundant' behaviour. It means standing back and allowing paradoxes, ambiguities and uncertainties to resolve themselves. It means encouraging experimentation and allowing failure. It means having trust that the self-organising capacity of all the individuals in the school will come through. Pascale *et al.* (2000) quote a leader at Shell, Steven Miller, who successfully adopted a self-organisation approach, but found 'letting go' very difficult:

> The leader becomes a context setter, the designer of a learning experience – not an authority figure with solutions. Once the folks at the grassroots realize they own the problem, they also discover that they can help create and own the answer – and they get after it very quickly, very aggressively, and very creatively, with a lot more ideas than the old style strategic direction could ever have prescribed from headquarters. It worked because the people at the coalface usually know what's going on. . . . Finally, the scariest part is letting go. You don't have the same kind of control that traditional leadership used to. What you don't realise until you do it is that you may, in fact, have more control – but in a different way.
>
> (Pascale *et al.* 2000: 191–192)

Paradoxical leadership

Leading a complex adaptive system, where unpredictable and emergent outcomes arise from a large number of factors working together, means working with paradox and being flexible. The paradoxes arise from factors we have already discussed, such as the need to control, but the inability to control and the need to allow space for self-organisation to occur; the need to be accountable, but the need to be creative and take risks; and the need to maintain stability whilst at the same time unsettling the school by promoting change.

Handling paradox has long been included in many lists of competencies for headteachers and other managers, but with very little understanding of what this means. Essentially, where there is paradox, we are speaking of working at the 'edge of chaos', where the system has optimum capacity to adapt and change its state with the least amount of effort (Cilliers 1998).

Sources of paradox in ourselves

It is first useful to reflect on sources of paradox and duality within ourselves. We often recognise we have 'different parts' which sometimes struggle against each other, as when we say 'part of me wanted to stay, but part of me wanted to leave'. This is important because it is sometimes important for us to nur-

ture opposites within ourselves to stop us moving too much in one direction as managers and leaders. For example, our strengths can easily become weaknesses if we don't impose a check on them by adopting some measure of their opposites. Percy Barnevik, a legendary leader, was renowned for his fast-thinking and analytical mind, but when asked about his strengths and weaknesses as a leader by Kets de Vries, he quoted these strengths as weaknesses. The reason was that these, combined with his formal authority, intimidated people so that they didn't speak their minds (reported in Evans 2000).

What can so easily happen, then, is that your strength can become your weakness. Your confidence, if it goes too far, can become arrogance, your ability to undertake detached analysis can become isolation, and your decisiveness could easily become compulsiveness. This is what Ofman (2001) calls 'too much of a good thing' in a person's core qualities. For example:

Core quality		*Pitfall*
Helpfulness	too much leads to	Interference
Flexibility	too much leads to	Inconsistency
Decisiveness	too much leads to	Pushiness
Carefulness	too much leads to	Fussiness

Reflecting on this gives us a more constructive way of understanding people's unpleasant behaviour: it is often a distortion of a potentially effective core quality.

Looking at the pitfalls inherent in a distortion of core qualities can lead us into an understanding of the paradox we need to maintain if we want to avoid these. Ofman describes the process as being that shown in Figure 7.1.

For a person with a natural core quality of decisiveness, a pitfall is 'pushiness', taking the decisiveness to an extreme. The antidote to this tendency lies in its opposite, so long as it is a positive quality – in this case, patience. Patience is then the challenge for this person. (Note in the model how the pitfall for patient people is passivity, of which decisiveness is the positive opposite.) Thus the paradox the decisive person needs to maintain is that between decisiveness and patience. This is not an either–or relationship, but an adoption of both opposing tendencies at the same time: it is to become 'patiently decisive'. Clearly, the example also points to the same paradoxical relationship of qualities for the patient person.

It is also useful to realise that very often negative extension of this positive opposite is a quality you cannot bear in others, being the pitfall of your 'challenge' quality. Ofman calls this your allergy, and this is the time you will most probably succumb to your pitfall – in this case you will become pushy in the face of a colleague's passivity, or even label someone who is patient as passive, with the same effect.

This insight is very important to us as leaders. It reminds us not to be afraid of contradictions within ourselves, but to actively engage in producing

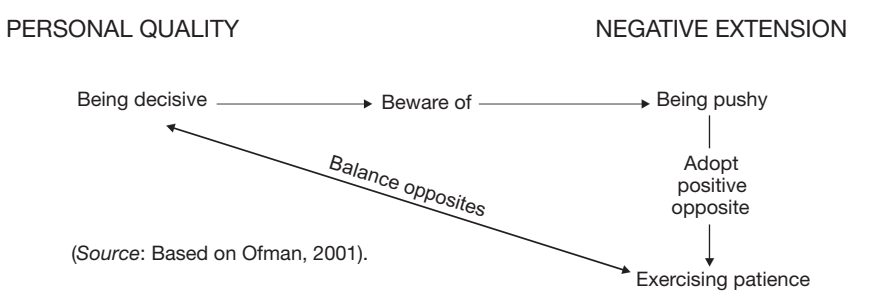

Figure 7.1 Paradoxical balancing of personal qualities

them if we wish to keep a balanced approach to our work and to understanding those with whom we work. Of course, at times we may not want such an approach, but this is one way we can consciously develop and evolve as leaders.

Sources of paradox in management practice

An understanding of paradox is useful in relation to key areas of strategic leadership in a complex adaptive system, where leaders may work 'at the edge of chaos' if they are to maintain stability and promote change at the same time. The shaded area in Figure 7.2 is the area where opposing tendencies within leadership, vision, strategy, control and culture co-exist: at the outer ends are the extreme positions in each case.

I have given the name 'zone of paradox' for this shaded area, to indicate that this is where opposing tendencies are acting together to form a new synthesis. You will see that the zone of paradox has width, suggesting that there may well be a shifting pattern between these opposite tendencies, but both will be present within a certain range, the shaded area. Outside this range at either side, one tendency is submerging its opposite.

Leadership

Here Figure 7.2 shows the range of tendencies in leadership. The dangers at either end of the scale are that people have no autonomy, or they have too much autonomy. It is the difference between over-control and under-control.

In the case studies in Chapter 4, Peter tended to operate within the paradox zone, constantly attempting to keep a balance between trying to control what happened, and allowing autonomous people to self-organise. Sometimes control would be more dominant, sometimes freedom, but both were present. John, on the other hand, moved beyond the left boundary of the paradox zone, over-controlling and therefore suppressing the freedom of

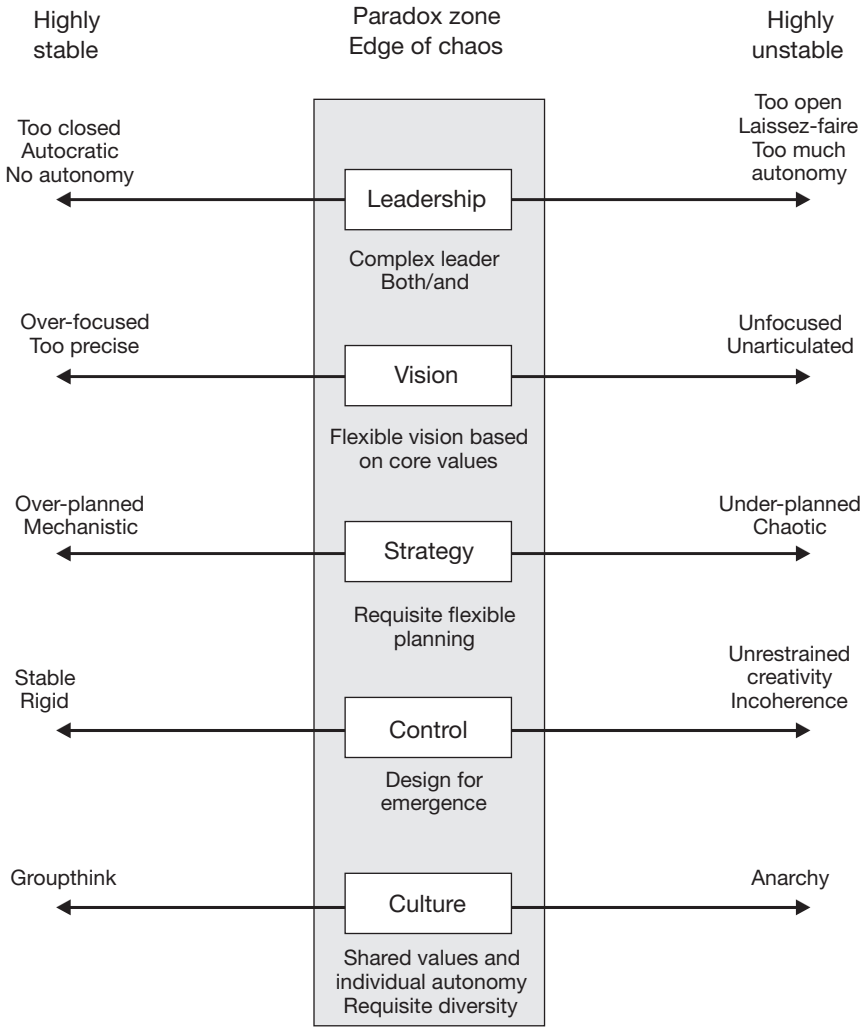

Figure 7.2 Dimensions of paradoxical leadership

interaction that generates innovation. The result was success for a time, until the changing situation demanded something different.

Control

Looking at control more specifically, the dangers are that too much control leads to rigidity and inflexibility, whilst lack of control will lead to incoherence. There may be unrestrained creativity, in the sense of 'everyone doing

their own thing', but without any kind of cohesion and organisational learning. This also points to the accountability aspect of control. Over-accountability will tend to suppress risk-taking and experimentation, yet lack of accountability may result in acceptable standards not being maintained. Control in the paradox zone has to bring the two factors together. Design for emergence is one way of holding the balance, and developing group and individual internal accountabilities that address the need to be creative, as well as to produce acceptable outcomes, would address the paradox to some extent.

Vision

The stress on vision has grown significantly in recent years and has become part of the conventional wisdom of school leadership. In my own study, heads stressed that vision should be flexible and responsive to the environment, but some found it difficult to articulate vision. Peter, for example, wondered if he really had a vision. Staff said he had, but both for them and him it was held at an intuitive level. In practice, they tended to operate to the right outside the paradox zone: they had a vision-in-practice, but no real articulated model.

Vision is meant to be a clear statement that acts as a binding force for those working in school. It is meant to cohere so that all are pursuing the same agreed ends. Vision-in-practice is somewhat different. It is actually the attractor, or attractors, towards which current actions in the school are leading, and is an emergent property of these actions. This means, of course, that a school may not actually be pursuing the stated vision at all! This is why, if the vision is to lead to coherent action, a complexity perspective suggests it should have certain properties:

1 Understanding the inherent unpredictability of outside events, and that longer-term prediction is impossible, it must have flexibility. This in turn means it cannot be too precise, since we cannot know what will be relevant in, say, ten years' time. Even the current concern for ICT may be passé.
2 It must provide meaning for all the school's constituents or stakeholders. There is a type of attractor called a 'strange attractor' that draws the system to different points, but within a fixed range. It therefore can give direction whilst allowing some variety of outcomes. To function as a strange attractor, the vision needs to have a level of generality from which individuals can each construct their meaning, i.e. following the vision could lead to a range of outcomes within an area of focus. In this sense, like poetry, it will be open to interpretations, and will therefore resonate with each individual a little differently. This will serve to unite, while at the same time opening the way to diversity of means.
3 At the same time as it needs to have generality and flexibility, it needs to be sufficiently precise to guide action.

Not too precise, but precise enough, general but informing individual meaning – here again we see paradoxical needs. If the vision is too vague, there will be no real focus; if it is too precise, it may become over-focused, and unable to retain its usefulness in changing times. As Deering *et al.* (2002) say, 'visions liberate as well as constrain, and the more variations they have, the more liberating they become' (p. 44). Paradoxically constructed visions should do both. Figure 7.2 indicates the different behaviours from different combinations of constraint and liberation within the vision.

Strategy

We saw earlier that the rational planning model has become the standard approach to school improvement, and also considered the way that this assumes knowledge of precisely what changes are required, and that these can be put in place according to a logical timetable. This approach does not cater for emergent change, where chance and opportunity or 'corridor conversations' can shape events. Nor does the approach cater for allowing people's individual ideas to germinate and develop through experimental trial and error.

Finally, there is the problem of unpredictability and how far ahead we can reliably expect our plans to fit the changing environment. As change accelerates, what is considered 'long-term' becomes a shorter and shorter period of time.

It is clear that our planning processes need to recognise the existence of emergent strategies as well as traditional plans. Again we need to have both. In the paradox zone, I have called this process 'requisite flexible planning', to indicate the need to look realistically at factors such as predictability and controllability of what is being proposed. Some items will lend themselves to close planning, others – especially where creative processes are required – will need less structured planning, whereas others will need no planning, simply a facilitation in the right climate, with open-ended time frames. Thus the school will be able to conduct all its projects in an appropriate manner.

Culture

Our predominant concern with culture in education has been about sharing values and being a cohesive team – 'all singing from the same hymn sheet'. The need for individual autonomy has tended to be submerged, as we have moved to shared values, whole-school policies, shared planning and shared practice. However, as we have seen, diversity and a measure of individual autonomy are necessary if we are to generate internal innovation: there needs to be the disturbance to the system that causes people to look at things in a new way. At Beldene, a shared 'culture of excellence' had developed very strongly, but innovative behaviour was low because there was a lack of individual freedom, and a tendency towards 'groupthink'.

The scale shows how both shared values and individual autonomy are needed if we are to have the 'glue' that gives the school a common purpose and stability, and yet the freedom, self-expression and contention that generate innovation. It may be necessary for leaders to 'break the symmetry' when shared values have led to too stable a state, where a staff is operating well within its comfort zone. This is what John did when he found a 'satisfied' culture at Beldene (Chapter 4). Once the symmetry of the culture is broken, a new state emerges.

The other end of this spectrum produces a different problem – anarchy. If everyone is 'doing their own thing' as separate individuals, there will be no cohesion to give the school any sense of unity or focus. Within the paradox zone, three nested cultures can co-exist:

1 a culture of shared values that give the school a moral foundation and from which appropriate actions can emerge;
2 a culture of respecting and valuing diversity, different mental models and constructive contention, to encourage development and innovation; and
3 a more mechanistic culture that ensures that routine administration is efficient and effective.

The effective management of these paradoxes depends crucially on the maturity of people and the strength of the relationships between them. As Linda Hill (2000) suggests, they must have the maturity not to make the contention into a win–lose situation and there must be an underlying culture of mutual trust. These questions of individual and relationship psychology are fundamental and we will consider these in the next chapter.

Conclusion

This chapter has concentrated particularly on ways in which school leaders can release the creative potential contained in the distributed intelligence of the school. In it, I have concentrated on ways in which the known properties of complex adaptive systems can be employed, and I believe much of this appeals to our own common-sense understanding of working in schools.

However, there is nothing in complexity science which says that one mental model is better than another, or that organisations should be kept at the edge of chaos (Lissack and Roos 1999). What it does suggest is that context and situation should decide which model is more helpful. This chapter has been pointing to the properties of highly evolved organisations. The crucial deciding factor will be the school's readiness for and ability to benefit from such an approach, whether there is time to allow emergence and whether the distributed intelligence is sufficiently developed yet. We will look at these factors in the next two chapters.

Key points

1 The psychological frames we adopt influence the way we see and interpret things. An important frame is that of accepting paradox.
2 The process of creativity may be individual, but the system of social networks plays a big part. Creativity may sometimes be intentional, may sometimes rely on chance.
3 A critical point of instability is known as the 'edge of chaos' and this is where new order and meaning can emerge.
4 True innovation emerges through processes of relating, and cannot be controlled or predicted.
5 For leaders there is a tension that must be maintained between sufficient design and sufficient space for emergence. Design must make the school ready for the emergent.
6 Effective emergent behaviour depends on individual quality, strength of relationships and encouraging diversity. This is distributed intelligence.
7 Redundancy and inefficiency are important aids to creativity.
8 The use of simple rules, 'skin-driven' anticipation, judicious use of equilibrium and edge of chaos states, and letting go once the design is in place, all facilitate effective emergence.
9 As leaders, we need to be aware of sources of paradox in ourselves and others.
10 Strategic leadership that enables emergence whilst still maintaining order means working at the edge of chaos, or the zone of paradox, in key strategic areas.

Further reading

L. Michael Hall's Book *Frame Games* extends understanding of frames and framing in many interesting directions.

Capra's *The Hidden Connections* has a very readable chapter on emergence in organisations, as well as chapters on how it relates to many other aspects of life.

Tardif and Sternberg (1988) synthesise a range of views from psychological researchers on the nature of creativity.

Evans's (2000) chapter in *Management 21C* addresses the idea of paradoxical leadership from a different perspective, but with the same idea of steering between opposing forces.

Chapter 8

Cultivate effective relationships

'No man is an island, entire of itself; every man is a piece of the continent, a part of the main.' So wrote John Donne in 1624. When we see our school organisations as a network of interconnections, and recognise that the strength of the network depends as much on the quality and quantity of these interconnections as on the individual qualities of the agents being interconnected, the importance of effective relationships becomes more than a wish for an amicable daily routine. Relationships become a major plank of school effectiveness, in a complex behavioural network, where to a greater or lesser extent, each part affects all the others. We are interdependent in our quest to reach a common goal or vision for our school. In this chapter we will look at the importance of relationships as they affect culture, what the function of relating is, what qualities we should strive for in our relationships, and some ways in which we might manage the relationship-building process.

Relationships and culture

The culture of a school is an emergent property of the ways in which people relate and the messages they give each other over a period of time. As Schein (1985) says, it is 'a learned product of group experience and is, therefore, to be found only when there is a definable group with a significant history' (p. 7). The way we behave and what we value in the school are taken for granted as they become accepted and part of our culture. Earlier we heard one head describing how it was 'not something you plan for at the beginning of eight years' worth of headship' but emerged over time from the actions and interactions of those in the school.

The strange thing, though, is that the very culture people have created then begins to determine the way they behave towards each other and their work. It assumes a 'structural property', much like an unwritten policy or rulebook. Such structures guide our thinking and behaviour, the roles we should play, the rules we should follow socially, but only continue to exist as we reproduce them and act them out.

How can we understand this process where on the one hand the structure is defining how we should behave, while on the other, by our behaviour we are maintaining or transforming that very structure? According to Giddens' (1979) structuration theory, the structure is both the medium and the outcome of our actions. It is a two-way process of mutual influence, of interdependence. A parallel to this process from complexity theory is that of co-evolution (Figure 8.1).

The importance of this for leaders lies in understanding how these co-evolve. We can only intervene in the culture by our own and others' activities and actions. A more conscious concern for these and the way they relate to the values we want to embody in relationships is the way to build an effective culture. Put another way, our expressed values as we interact must be the ones we espouse. It is at this behavioural level that cultures change, not at the level of visions and mental alignment with them. Schein suggests that building the culture of an organisation is a key task of leadership, but it is clear that this cannot be done overnight, and unconscious patterns may continue to be exhibited for some time after conscious decisions have been made to adopt new ones.

The process of relating

Stacey (2000, 2001) has firmly recognised the fact that the process of relating is central to organisational life. In an extension of complex adaptive system theory, he sees organisations as complex responsive processes, and it is largely on his work that the following section is based.

It is clear on reflection that organisations like schools are about achieving goals through joint actions between people. Even the paperwork, policies and plans are there to support this purpose. The relationships are built through communication, which is largely talking, but written policies, displays and the like can be seen as talk – they are expressing someone's ideas. As Stacey points out, all our budgetary, marketing, hierarchical structures and other systems are just tools employed in the process of communicative interaction.

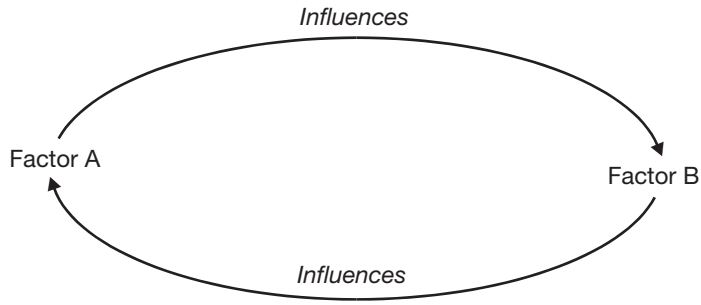

Figure 8.1 Co-evolution

The unit of communication between two people or more can be seen as a gesture by one, followed by a response by another – person A suggests something, and person B responds to it. Person A then responds to B, and on it goes (Figure 8.2).

This is Mead's (1934) understanding, that 'meaning' comes from the whole social act shown in gesture and response. We find the actual meaning of what we are saying from the way others respond to it. It is, for example, a central tenet of NLP that the meaning of what you say is the response you get.

This is essentially the process that is occurring in class when the teacher and pupils are negotiating meaning. As they relate through gesture and response, meaning emerges. Sometimes this even results in the teacher's sense of meaning being transformed – she begins to understand a topic differently. Perhaps this is why it is generally acknowledged that teaching something helps you to understand it.

The idea of conversation at the heart of organisational life is an important one for this reason. As person A makes a gesture, the response of B is to a greater or lesser extent unpredictable. It might follow some pattern, but its detail will not be known beforehand. Thus as the conversation progresses, the two people are constructing the future as they go, and the future of this gesture–response activity is unknowable in advance. This is so obvious for us as managers that we are likely to overlook its importance.

In my own work I often have the chance to observe role-play interviews, for example where a 'headteacher' has to express concerns about a member of staff's performance and arrive at a plan for improving it. It can be fascinating to see how such an interview can take unexpected turns, often changing direction completely on the basis of one phrase, which can have an effect out of proportion to its importance. Such a change in direction often means that a new theme has emerged in the conversation.

As conversations progress, themes self-organise. Stacey (2001) illustrates this by an example of a group of people playing a word game. One person

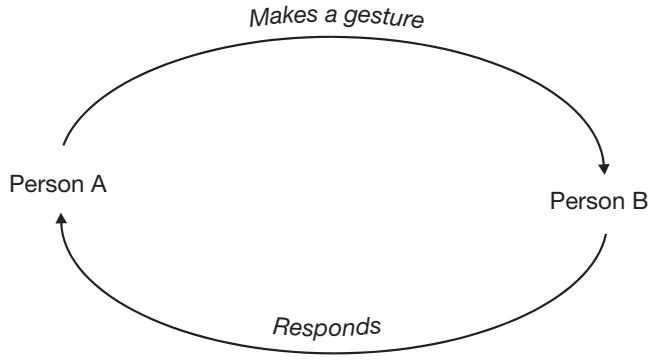

Figure 8.2 Gesture and response

starts with any word they choose and others then respond. The word usually triggers a response by association – e.g. car leads to train, someone else adds bus and so on. By association a theme of transport is emerging. Eventually someone tries to break this chain, and if they do, another theme begins to self-organise. In our normal conversations, this is what happens – we swirl about a theme such as football until some remark triggers another theme. These themes can be seen as attractors in the conversation. It is important to note that such conversations are interwoven with feelings and emotions – i.e. they reflect the whole being, with logic, inconsistency and defensiveness all involved

We can see from this process of gesture and response that meaning is not simply transmitted from one to another, but is interwoven as shared understandings are developed over time, and at the same time social relationships are built, and, along with them, power relationships.

Stacey *et al.* (2000) see organisations as highly complex processes of people relating to each other in this way, and through forming intentions, choosing and acting in relation to each other, they constantly create the future through a self-organising process – no one steps 'outside' to direct the process.

The themes created in this process may be legitimate ones that reflect the official ideology, and about which people can discuss openly and freely, but 'shadow' themes are also important. These are themes that cannot be addressed openly but only with an informal, trusted group, since they do not conform to the official ideology. The two types of theme operate simultaneously, and are at the same time both forming and being formed by power relations. This difference between legitimate and shadow themes is probably what motivated the maths department in one secondary school to demand meetings that were not minuted:

> It's informal. It's not minuted, which is a request of the staff, to be honest. They said they'd prefer to keep it open, and that way they would share ideas more freely. (Head of department)

This would lead to a climate that would enable freer discussion without the feeling that 'weaknesses' would be evident to higher management who read the minutes, and ideas could be explored without being judged or vetoed.

The creativity of the organisation rests in the quality of the relationships driving the responsive processes. If we are members of an organisation where the same themes of discussion are constantly recycled – for example, staffroom conversation constantly refers 'to what we used to do' – then there is a stable attractor – a pattern of conversation in which we are stuck. There is consequently little or no movement. If on the other hand conversation is of a free-flowing nature, and new themes constantly emerging, then it is at the edge of chaos and new understandings may emerge. Thus those who successfully move the group to new themes, new conversations, are leading the group towards new knowledge.

What Stacey is saying here about the edge of chaos, or bounded instability, is very important, I believe. You may have had an impression as we looked at the schools in Chapter 4 that the edge of chaos involved conflict and massive disturbance, and that it was not a pleasant place to be. Stacey's interpretation that free-flowing conversation represents this zone means that it can be an interesting and exciting place, full of ideas even though there may be conflict. I remember one teacher telling me that the school was 'buzzing' after a new and dynamic head had taken up post, and I think this description gives some idea of what the edge of chaos can feel like. However, as we have seen, the ways such free-flowing conversations will progress, and the new directions they will take, are unpredictable; but they are a powerful source of creativity. Working at the edge of chaos in this way, new ideas, thoughts and meanings emerge in conversations, often in the shadow system initially. These new ideas may survive if they successfully negotiate competition from other ideas. The question then becomes, how does such free-flowing conversation arise and develop?

The key to such conversations developing is, as we have seen earlier, the presence of diversity, and this is what gives the organisation the internal capacity to generate or respond to variety. The diversity arises from people in the school being different, having different interests, ways of viewing the world and so forth, and from the factors arising within the processes of relating, such as different groups talking to each other, bringing different concepts and vocabulary which enlarge the conversation and introduce new themes.

Finally, Stacey (2000) points out the importance of anxiety in this process. We put up defences against anxiety, for example constructing plans to defend us against the anxiety of uncertainty. If we have too much anxiety, we may move into dependency, as the teachers at Thornfield did (Chapter 4) when they felt overwhelmed with their situation and what the inspectors wanted, asking the head to just tell them what to do. Alternatively, it may lead to fight or flight, as some staff did, quite literally, at Beldene when the new head (John) took over. Clearly, over-anxiety will militate against clear thinking and free-flowing conversation. What is required, says Stacey, is 'good enough holding'. By this he means creating conditions where people can hold both the excitement and the anxiety of exploring the new. Good enough holding of anxiety is achieved, he says, where the quality of relating is based on trust. The patterns of relationship are then safe enough, but also exciting enough.

This has been a very condensed account of this emerging view of how organisations operate, and of the way they evolve through relating. I have sought to show how fundamental is the quality of relationship to the possibilities for growth of the organisation and the people within it. Table 8.1 summarises the way the dynamics of relationship operate as Stacey sees the process. As he says, 'the dynamics of a complex network of interacting agents is determined by the nature of the relationships across the network' (Stacey 2000: 367).

Table 8.1 Dynamics of relationship

Factor	*Highly stable*	*Edge of chaos*	*Highly unstable*
Information and energy	Repetitive	Flowing conversation	Random and unstable conversation
	Predictable	Many competing ideas	Information overload
Connectivity and diversity	Too little stimulation	Sufficient interaction and sufficient difference to stimulate	Too many contacts and too much diversity prevent agreement
Anxiety	Avoided. Comfortable conversation	Contained anxiety with excitement	Dependency, fight or flight
Formal power	Autocratic or over-directive may lead to compliance and high stability	Steers between extremes of control and freedom; leaves space for self-organisation	Over-direction may lead to revolt, under-direction to other power rivalries

(Drawn from ideas in Stacey 2000)

The importance of relationships

Relationships are important to us, as social beings, for many reasons, but three of these are particularly important as we consider why relationship should receive more attention. First, humans require meaning in their lives, meaning which can be found in relationships, which can provide a central purpose where the self is transcended, where there is a chance to contribute to a higher purpose. It is playing for a team in an important enterprise. However, it is also through relationship that our sense of self largely emerges as we interact and get feedback on our contributions. And this applies to pupils too! The group is forming the individual at the same time as individuals are forming the group – that is, our individual psychology changes as we go through changes in social relationships. This is why so often a teacher moving to a new school seems to take part of their previous school with them. Finally, there is the sense of belonging that is so important to us. As Capra (2002) points out, it is important to remember that an organisation has two purposes. One purpose is the work it has to carry out: the second is a social purpose.

The quality of relationships

If we want to use diversity and interconnection effectively, and to keep anxiety contained, there are foundational qualities of relationship we must build, a context in which these factors can thrive. For Lewin and Regine (1999), we must pay attention to some key relationship qualities:

1	Authenticity	People need to be genuine, open with each other and true to themselves
2	Mutual care	The need to demonstrate caring about people as themselves, about what they think and feel, about what they say and do
3	Mutual trust	This they see as critical, and we will explore this in more detail below

For Lewin and Regine, relationships built on these fundamentals will have the quality to accept diversity and use it to good effect as they respect others' mental models. They will build a community of care and attention, where people feel they can influence things and be part of a larger purpose.

One teacher at Enderby described how accomplished the previous head was at showing that people were special:

> He used to amaze me how he remembered details, and it didn't matter whether it was the lollipop man or somebody who'd left x number of years ago, he remembered the detail, and at that moment in time, when he was talking to that person, he made them feel very special. And I watched that, and I thought, 'my God, how does he remember all those details?', but he did! (Teacher)

In the race for school improvement, the weight of accountability, the concern for addressing weak teachers, the top-down culture being imposed by government policy, and the sheer lack of time, schools may be finding it more and more difficult to afford time for people as people in their own right, who are valued for themselves.

Lewin and Regine offer some advice on how we might develop these relationships:

1. Change perspective – pay as much attention to how we treat people as we do to structures, strategies and statistics.
2. Attend to interactions – up to a point, the more the connections, the more robust the system.
3. See people, not employees.
4. Assume goodwill.
5. Trust too much rather than too little.
6. Recognise a job well done – show genuine appreciation with feeling.
7. Believe in people and remember they are inventive.
8. Be alert to unfolding and unexpected directions as they emerge.
9. Talk to people, listen and respond.

Many of us will look at this list and say, 'we already do this'. This may be true, but it could also be self-delusion. We may intend this, but remember,

the meaning of communication is in the response it gets. To reality-check your relationship climate, you may be wise to seek feedback on the nine questions.

Cycles of trust

In the previous section I suggested trust was a critical area of relationship building, and I would now like to point to some reasons why, developed from work by Kelly and Allison (1999). First I want to point to some of the potential effects of mistrust in organisations. Figure 8.3 shows a series of self-sustaining loops (see Chapter 3) that reinforce each other. In the first loop, management's mistrust of their staff leads to a feeling that they need to exert more control. This feeling could also arise from a sense of being overwhelmed and out of control in the face of multiple demands from the context. Management may then put more emphasis on accountability measures. The exertion of this control induces lower commitment from staff in what they are doing, partly due to their lack of say in this, and partly because they may not believe in it. In turn, this leads to a mistrust of management, a climate that keeps reinforcing the loop.

The effect of this loop of mistrust is to induce anxiety in both management and staff. For some, this may gravitate towards fear in the face of accountability measures (e.g. the response of some teachers to OfSTED inspections), and this fear may lead to a concern for the self, a lack of sharing and internal competition for, say, resources. Some criticise the threshold and post-threshold systems, where teachers move to a higher scale of pay based on their individual performance, for this reason.

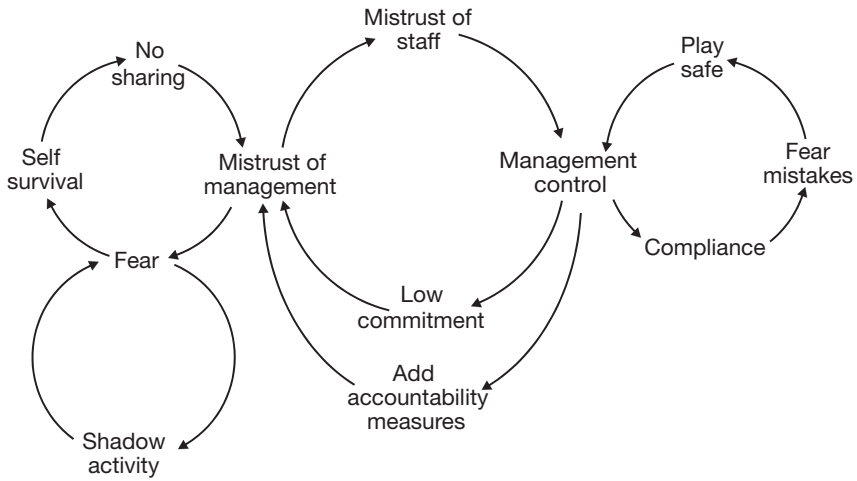

Figure 8.3 A cycle of mistrust

Finally, this self-survival loop leads to one where people are frightened to make mistakes. To avoid this, they are compliant with management's wishes, and may even resort to deception, hiding their mistakes and – as has been reported about the SATs tests – actually cheating. People feel safer sticking to the tried and tested. All these factors then fuel the mistrust loop again, leading to more need for control. It is easy to see how such a cycle of events dampens creativity, risk taking and innovation.

Figure 8.4 shows what may happen when the starting point of mistrust is replaced by one of trust. In the first loop, management start from a position of placing their trust in staff, rather than trying to over-control what staff do. They invite collaboration, and recognise the right to, and indeed need for, individual autonomy within the bounds of the purposes of the school. In other words, management recognise people's different mental models, and do not see them as wrong simply because they differ from those of management. The result of this is increased commitment from staff, who feel their individuality is recognised and respected. Staff in turn then has trust in management, and the loop reinforces itself.

That loop leads to people having confidence in themselves, since management is showing such confidence in them. When people are confident in themselves, they are less likely to behave in ways that are self-defensive, and are therefore more likely to join productively in the work of the group. They are more able to share practice, and are happy to share ideas and resources. As they do, they gain greater confidence in each other: they trust each other, and again the loop reinforces itself.

This confidence and sharing then affect the learning loop. Teachers in an open system will now be able to share a concern for learning and development in an open and confident way. As they discuss openly and confidently,

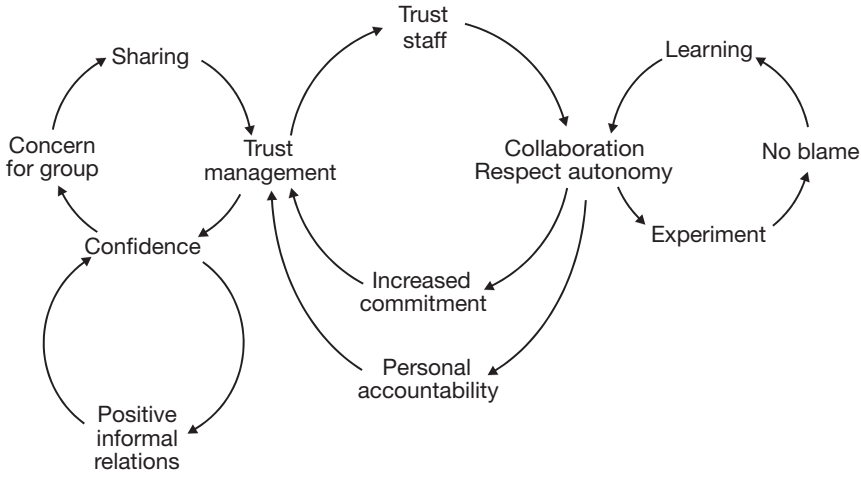

Figure 8.4 A cycle of trust

new ideas and new approaches will emerge. Teachers will feel they can develop these, and experiment without being blamed if they fail, rather than always following safe and uncontentious ways. In their search to improve their practice, they will confidently invite and respond to colleagues' feedback on their practice for their own purposes of improvement rather than as management's judgements of their performance. This is, of course, an idealised picture. By now, we have recognised how complexly different people's responses can be. However, I believe these two patterns – the functional and the dysfunctional – can be thought of as general tendencies, and that it is easy to identify which would be the best if we want teachers to feel empowered and creative. I also believe that very many schools try and succeed in operating according to the functional cycle. However, the difference between what we intend and what we accomplish can be significant, and it is worth doing a reality check about the messages that are actually being understood. It is very difficult, for example, for an individual school to change the messages given by central government's accountability measures, from targets, to inspection to performance management. All these say loud and clear 'we do not trust you'. A central concern for school leadership is how to counter such messages, though if central government re-thought its assumptions this would be unnecessary.

The skills of trusting

In the previous section I pointed to the centrality of trust in the process of building effective relationships and practice in the school. However, our common sense tells us that simple blind 'trust' could be a great mistake: we have to learn who to trust and when to trust them through experience. Always trusting and never trusting are both unskilled choices of what to do. For school leadership, trusting people inevitably holds some degree of risk and courage and must be looked at as a two-way process. Trust and trustworthiness must go together. Leadership is a relationship, and if it is to work to the best advantage, it must be based upon mutual trusting and trustworthiness.

This means that each of us must assume responsibility first for ourselves as people who are worthy of trust, willingly being responsible and accountable for our own actions. When something goes wrong, untrustworthy people will make excuses, blame 'the system' or other people, criticise and generally try to divert their own responsibility. The trustworthy person, by contrast, has a high degree of self-development. As Hall (1999) puts it, such people can conquer their moods and negative emotions, they make a point of acting according to what they say and they accept responsibility for themselves and their actions. They make no excuses for themselves, and where they inadvertently breach a trusting relationship, they know how to make amends. Fundamental to all these skills is the fact that they value trustworthiness highly as part of their own integrity.

Nelson-Jones (1996b) suggests three areas in which we can exhibit trust: trust in ourselves, trust in others, and trust in our relationships with others. Trusting yourself means you feel secure in your identity, your mix of purpose, beliefs, values and responsibilities. You are confident in yourself and in your trustworthiness.

Trusting others can mean you see the same qualities in them, and you have confidence in their trustworthiness, for example that they will do as they say, or that they will be supportive to you. Finally, we can trust the relationship, that it is not too fragile, that we can rely on the co-operative intentions of those in the relationship, who will be concerned for each other's welfare and growth.

Earlier I pointed to the risk involved in trusting, and suggested the problems of knowing who to trust and when. For school leadership this poses the problem of where the process starts. This is an interactive process, where the degree to which persons trust themselves, each other and their relationships influences others' trust, and also the degree to which each person is trustworthy influences others. Demonstrating greater trust and trustworthiness can then result in a reinforcing cycle (Nelson-Jones 1996b). Management, I believe, must initiate this process, but responsibility for making effective relationships lies with every individual.

In their book *Trust and Betrayal in the Workplace*, Reina and Reina (1999) suggest management should pay attention to three aspects of trust in particular:

1	Contractual trust	expectations appropriate delegation keeping agreements congruent behaviour – i.e. actions support words being true to ourselves assuming responsibility for dealing with a wrong result – apologising, making amends consistent actions
2	Communication trust	sharing information telling the truth – even admitting mistakes maintaining confidentiality giving and receiving constructive feedback

Without these, people have to guess and mind-read. If vital information is not shared, we feel undervalued and under-trusted. Obviously delegation and trust go hand in hand.

3	Competence trust	respecting people's knowledge, skills, abilities and judgement

Although effective relationships do depend on the responsibility and skills of individuals, if you are in a leadership position you are expected to manage relationships as part of your role. In fact, the higher your position, the more time you are likely to spend forging and managing relationships.

As we saw in Chapter 5, school leaders need to manage relationships with a range of different stakeholders and others, for example:

- governors;
- upward stakeholders;
- peers;
- external stakeholders;
- staff who report directly to them;
- other staff;
- pupils and students;
- media; and
- themselves.

Deering and colleagues (2002) rightly point out that all these parties have their personal agendas, which fundamentally motivate them. As leaders, they suggest, we need to dovetail their agendas with ours so that both sets of needs are fulfilled. Dovetailing agendas is about co-operation, coalition and mutual help, and it is important to include non-rational items such as the need for status, self-esteem and reputation. It starts from perception and understanding their wants and needs – that is, what they find important. It's a win–win situation, in which people co-operate and mutually help each other and fulfil what they see as important.

Values and skills in relating

If we wish to develop effective relationships in the school, we have both to value good relationships and to increase our skills in relating. Nelson-Jones offers a series of factors we might value in relationships, to which I have added a school perspective:

1. commitment and loyalty to colleagues and pupils – relying on and trusting;
2. caring and compassion, a responsibility towards colleagues and pupils both pastorally and in their development;
3. acceptance and tolerance – accepting each other as persons, with differences in attitude and philosophy, and respecting their different mental models;
4. being ready to co-operate and compromise where appropriate;
5. equanimity – the ability to relate to all equally;
6. openness and the ability to reveal your thoughts and feelings to others;

7 concern for growth in effective relationships, with self and with others;
8 assertion – a concern to offer opinions, take initiatives and to stand up for our own rights;
9 to confront issues in the interest of the relationship;
10 having fun!

You may well want to add other relationship values to this list.

Much of our work in schools is done through groups or teams, where effective relating is vital. Katzenbach and Smith (1993) found in their study of effective teams some relationship values similar to those above. For example, high-performance teams construct their relationships as they define a common approach to working and interacting. As they say, many teams do not relate the social aspect of their work to performance, whereas members of effective teams adopt a range of social roles such as 'challenging, interpreting [or] supporting'. They assume responsibility for 'energizing and supporting one another, and for keeping each other honest and on track'. Members of high-performing teams, in addition to being committed to a common purpose and using complementary skills, adopt the following relationship values:

- develop and share management processes – a common approach to relating as a team;
- share humour and fun;
- listen, question and challenge;
- exercise openness and honesty; and
- encourage each other's development.

Working on relationship building is clearly of central importance to high-performing teams.

Nelson-Jones (1996b) believes we can develop our skills in relating, though he does acknowledge some people object to the approach as being manipulative. He sees relating skills as an aspect of life skills, with both inner and outer dimensions. The outer 'game of relating' is about our actions – voice qualities, verbal messages, body language and, of course, the messages our actions actually give. Having control over our relationships means, though, that to act effectively, we have to think and feel effectively: this is the 'inner game'. Feeling, thinking and acting are inter-related, and can each affect the others. Thus we can change our skills using any of the three as a starting point (Figure 8.5).

Cycles of trust and good-quality relationships form a supportive base within the school for the kinds of social learning through effective interaction we discussed earlier in the chapter. In other words, they form a sound background to enable effective self-organisation to take place. These are fundamental, bedrock relationships that produce the climate for higher-order interactions. One of these is dialogue.

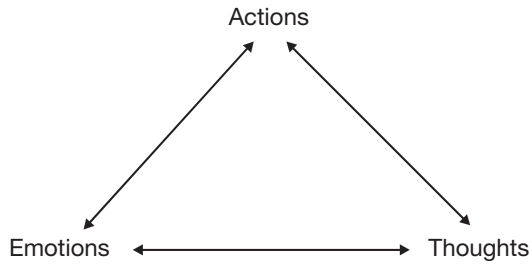

Figure 8.5 The behaviour triangle

Dialogue

David Bohm, a particle physicist and philosopher, has proposed a concept called 'dialogue' which promotes the acquisition of group meaning through a process of close examination of the thinking going on in the group (Bohm *et al*. 1991). This is a specialised view of the word 'dialogue', which means much more than our common-sense understanding of the word.

Bohmian dialogue is a process whereby a group of people explore their thinking – a meta-level of thought – to unravel the subtle control that can be exerted over it by presuppositions, ideas, beliefs, feelings and so on. As such it is a place for collective learning, where we begin to explore other people's interpretation of the world, where each listener is able to reflect back a view of some of the assumptions and unspoken implications contained in what others are saying. This gives all participants chance to examine the prejudices and presuppositions that lie behind their thinking and habitual roles.

Interestingly, such a dialogue is conducted without a pre-determined purpose or agenda, and yet a coherent sense of shared meaning emerges. This free-forming debate is very different from the meetings and discussions we have in schools, where agendas are very much expected, along with a clear purpose for the meeting. Perhaps these show how very time-conscious we have become, and how everything must be 'controlled' by a predetermined end.

Because dialogue is not there to accomplish a pre-determined end, it can initially be frustrating to participants: there seems to be no goal, but as time goes on, increasing trust, both between group members and in the process itself, leads to the expression of thoughts and ideas that are usually hidden. The frustration can be used to clarify the processes of dialogue itself. There is no 'voting', no attempts to reach consensus, and no attempt to avoid conflict. What happens is that people find themselves immersed in a common pool of meaning that is constantly changing. Dialogue is not, then, the same as discussion, where there is a deliberate attempt to achieve a goal, come to an agreement, solve a particular problem or, in the least skilful discussions, compete to have your own opinion adopted.

So what is the benefit of dialogue for schools? Certainly it will not fulfil the need for the routine meetings that are needed for dealing with specific issues. What it may accomplish is to help the school to begin to think effectively as a group and to allow the emergence of new and creative ideas. Such sessions would be a halfway house, almost, between formal staff or team meetings, and informal group discussions, which take place in the shadow system, but for which there is less and less time as teachers try to keep up with a very full agenda. Dialogue would be a way of increasing the school's group creativity.

In a session of dialogue, there is no 'leader' directing proceedings. It is very much a process between equals, though a facilitator would help initially, simply to ease the process. Any director or chairperson would inhibit the free-ranging thought and feelings that are shared.

It is important to recognise that in the school, there will already be power relationships and an established hierarchy, which may inhibit the expression of thoughts, particularly where these may be critical of others, or leave the speaker vulnerable. This means there would need to be initially some exploration of people's fears and concerns about participating, and maybe a more specific agenda. Certainly, senior management need to be convinced of the value of the process before embarking on it. There is not the space to go into the process in more detail here, but hopefully the power of the dialogue approach in generating honest and useful interactions to move the school forward is evident.

Finally, here is the reaction of a participant in dialogue, from a business background:

> I was extremely impressed with the technique. I have been in team building/conflict resolution situations in the past and the 'conversations' went for a considerable amount of time, each of the involved parties defending their respective positions. It was entirely different with dialogue, after Prasad explained what dialogue was and what was expected from each of us, it was as if the whole situation had been defused.
>
> (Kaipa and Volckmann 1999)

Complex processes of relating

In this final section, I would like to return to the concept of complex processes of relating. Stacey (2001) is unimpressed with Bohm's dialogue concept, which he suggests fails to fit in with complex processes of relating. Instead he seems to imply that we leave all the processes of interaction as they are, but try to understand them better, and realise that we must have both the positive and the negative at the same time if we are to have emergence of new knowledge. I am not fully convinced by his reservations, which are based solely on Senge's description of the process (Senge 1990). The dialogue process does not remove disagreement and contention, but does

encourage clearer thinking and participation and acts as a catalyst for new emergent themes and conversations. Further, the dialogue process is not necessarily intended as one that dominates the way all conversation in the organisation proceeds: there will still be what Stacey refers to as 'ordinary communicative interaction in the living present'.

That said, this communicative interaction is an important potential source of creativity and innovation, as we saw in Chapter 7. Although prescriptions for how to ensure that innovation emerges from the processes of relating are impossible to formulate, there are a few possible guidelines:

1 Value informal conversation and, where possible, create time and space for it. The new head at Beldene made trying to persuade staff to use the staffroom one of his priorities, even to the extent of bribing them with free drinks.
2 Try to ensure appropriate diversity, of culture, of mental models. This has implications for appointments and staff deployment into teams.
3 Encourage talking across and between subject specialisms or key stages, to expose people to different ways of understanding, and different conversations.
4 Watch out for 'stuck' conversations as a sign that some section of the school may be moving towards an unhealthy stability. Note where new themes are emerging.
5 Where conversations are stuck, attempt to inject new themes to move the conversation on, but be prepared to accept that your efforts may or may not be successful. Persevere.
6 Watch the general level of anxiety in the school, and keep it within productive bounds.
7 Allow for redundancy. Do not expect people to be constantly using their non-contact time 'productively'.

Most of these points apply just as much to our relationships with our pupils. For example, the measure we often use of pupils 'being on task' denies them any redundancy, or time when they might be reflecting rather than actively producing something. They also need time to talk and negotiate meaning with fellow pupils and teachers, time which our hurried curriculum tends to disallow. And as we hear about pupils being over-anxious and over-tested, the concept of holding anxiety at appropriate levels has implications for them too.

Conclusion

In this chapter I have focused on the central role that relationships play in the school organisation. This is something I have always believed central to schools, but something that has been fragmented and downplayed in recent

years as schools in England have struggled to fulfil an immense national agenda. A complexity theory perspective actually supports and strengthens what many of us realise intuitively about the relational base of the school. It forms the culture of the school, and the identity of those within it. The culture and the way we relate co-evolve together, and the 'conversations' we have in those relationships, contain the creative potential of the school: we learn through social interaction, both formal and informal. It is little wonder, then, that trust is such a vital foundation, and that the quality of relationships has such an important part to play in our schools.

Key points

1 The strength of the school depends as much on the strength of the relationships between people as on their individual qualities.
2 School culture and relationship behaviour influence each other.
3 In the process of relating, meaning emerges. This process constructs the future, and because it self-organises, cannot be predicted.
4 The pattern of conversation may reflect edge of chaos or very stable states.
5 Relationships are important both for work and for social purposes.
6 The quality of relationships and positive cycles of trust are fundamental to encouraging confidence and creativity.
7 Skills of trusting can be developed, and are important for team development.
8 The use of 'dialogue' as a means of communicating that is open and that surfaces presuppositions, beliefs and feelings can enable honest and free-flowing interaction.
9 Redundancy and the right level of anxiety are important factors in enabling creativity.

Further reading

In his *Complex Responsive Processes in Organisations* (2001) Stacey examines processes of relating in detail from a mainly theoretical perspective on how these processes actually make organisations work.

Several complexity theorists discuss the importance of relationships in a more general way. Kelly and Allison (1999) concentrate on the importance of trust, and Lewin and Regine (1999) also stress the fundamental position of relationships.

For relational skills, Nelson-Jones' books are clear and thorough. *Relating Skills* is mainly about personal rather than organisational relationships, but there is some transfer. *Effective Thinking Skills* shows how we can develop more skilled approaches to our own thinking.

Chapter 9

Develop sustainable strategic fitness

The ideas contained in the last four chapters give us a background for understanding what a school needs in order to maintain strategic fitness. In 'The art of juggling' we looked at the web of forces that produce unique school configurations, and discussed the importance of alignment and coherence. We will expand on this in this chapter. In Chapter 6 we looked at the idea of steering an organisation, how, to both maintain stability and produce change, we need as leaders to steer a course between design and emergence, and that what the organisation actually does will be a response to this design, not a total replication of it. Design that enabled self-organisation and learning would lead to the ability to self-organise in response to the environment. We also looked at some of the ways of incorporating complexity principles to help us in steering the school.

Chapter 7 explored the need for creativity in schools, developed the theme of emergence more by looking at structures and processes that can assist it, and looked at sources of paradox in management practice. Chapter 8 followed up by examining the centrality of effective relationships, the processes involved, and, crucially, the notion of complex processes of relating. As we look at sustainable strategic fitness, we will draw on and extend the ideas in these chapters.

Strategic fitness

In Chapter 2 we looked at the theory of dissipative structures, which maintain their structure but, at the same time, constantly evolve. In the world of schools, there must be a similar process of stability and change if they are to maintain strategic fitness – the constant ability to self-organise in response to the changing needs of their environment and the capacity to identify those needs. If a school is to avoid constantly 'fire fighting' as it tries to accommodate yet another demand from its multiple stakeholders, it must have the structures, working practices, group and individual capabilities that will keep it up with, or even ahead of, the game. That is to say, schools need the capacity to co-evolve with their environment, both of other schools and

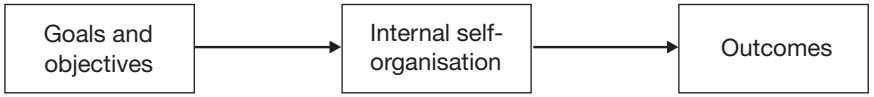

Figure 9.1 The route to outcomes

of the wider social context, and produce appropriate outcomes for pupils and other stakeholders (Figure 9.1). At any stage, the school needs to provide the most successful outcomes it can. It cannot afford, for example, three years of 'losses', as a business might, whilst it builds the most effective system.

We saw in Chapter 5 that each school has a unique configuration, of staff abilities, predispositions, culture, social context, history and leadership. It is these factors that self-organise to produce the outcomes of the school. The task of the leader is to lead the school in such a way as to enable this, but also to be moving the school forward towards more effective self-organisation from which better outcomes can emerge over time.

There are two important concepts to note before we move further. 'Self-organisation' means that there is no outside force 'directing' the way the school should work (although there are many forces that may *influence* this, as we saw earlier. However, the school's response to these forces is its own.) The head and other leaders in the school are part of the configuration, the network of power, capability and interaction. A school's self-organisation can occur just as much through coercive leadership as through any other means, and this may at times be the best way, though, as I shall argue later, not the way that will ultimately provide the most enduring quality of strategic fitness.

The second point follows this. Although it is essential for the head to be able to adopt a meta-position to understand the workings and success of the whole system of school or department, in doing so they must avoid seeing the organisation as something separate upon which they act: they themselves are part of that action – and if there is a problem, part of that, too. Within the configuration as it stands, heads have to be able to adopt the best approach possible at that time to attain optimum outcomes. It is not about whether, for example, distributed leadership is the best way. Looking for a 'best method' is a false trail. The best method is the one that works with the configuration. As this changes, then so may the 'methods'. Leadership should evolve with the whole configuration, and it is different total organisational configurations that we must look at to discover the most effective self-organisational abilities, rather than simply leadership practices.

Three essential factors

The level to which three essential factors are developed determines the strategic fitness of a school. The first two are:

1 the school's ability to self-organise in response to the needs of its environment or changes in its internal structure;
2 requisite coherence: the alignment of all factors to obtain optimum outcomes given the school's present configuration.

These two work together to give strategic fitness. To make that fitness sustainable, the school needs to move to

3 high-level self-organisation using distributed intelligence, and high-level coherence in purpose, individuals and relationships.

Levels of strategic fitness

Schools clearly differ in terms of their strategic fitness levels, in terms of their abilities to absorb and create change. Kelly and Allison (1999) have usefully identified five levels of both internal and external fitness. Kelly and Allison work on the premise that self-organisation will occur anyway. At its lowest level, it is ineffective and unable to keep pace with its environment. Such organisations are near to collapse, as their work does not match the needs of the environment. At level three, internal self-organisation is keeping pace with the environment, and the organisation is surviving. At level five, the self-organising processes not only are sufficient to adapt to the environment, but also shape that environment by creating major changes in it. Similarly, a school's ability to demonstrate increasing levels of fitness is dependent on the level of its ability to self-organise, and the coherence of the configuration of factors within its individual configuration as a school.

School configurations

In Chapter 6 I suggested some of the factors that needed to be aligned if a school was to be effective, and that each school had a unique configuration. Table 9.1 shows three different school configurations that show increasing levels of strategic fitness, based on Raynor (2000).

In the failing school, the internal processes are not in alignment with the needs of the environment, for whatever reason. Either systems and procedures in the school are random and uncoordinated, or there is no sharing of values and unified purpose, and so on. Partly for this reason, any self-organisation that occurs is unhelpful and not consciously applied to moving the school forward, but more probably applied mainly to the informal system and typified by stuck conversations. This school will be either at the closed end of the stability scale, where its values and processes are conservative and unchanging, or too much at the open end, where leadership is laissez-faire and processes chaotic. The school is therefore not adapting to the environment, not putting new initiatives into place, not developing its staff, and not keeping up with

Table 9.1 Three school configurations

	Failing school	*Adaptive school*	*Creative school*
Coherence	Incoherent and unaligned	Aligned vision	Coherent in vision and practice
Self-organisation	Dysfunctional and inappropriate Mainly informal	Functional but largely unconscious Formal and informal still separate	Functional and conscious Formal and informal support each other
Evolution with environment	Not adapting to environment Falling behind	Reacting to environment and surviving	Co-evolving with the environment and leading change
Leadership needed	Direct, possibly coercive	Motivational, possibly visionary	Indirect, distributed
Sustainability	Short term	Medium term	Long term

the school ecosystem. The type of leadership needed to get such a school back on track is probably one of direct intervention, where in the short term, staff need to be told how to overcome this problem. The timescale for this to happen is usually very short, and this therefore makes direct intervention even more necessary. This is what happened at Thornfield, where staff simply asked the head to 'show us what to do', and even at Enderby when an inspection was forthcoming. This directive, hands-on leadership can be effective in bringing about some rapid change, but the process may not be sustainable over the long term.

The adaptive school, by contrast, has developed alignment. Staff agree on appropriate goals, and the school's practices are in line with environmental needs, offering sufficient requisite variety to meet those needs. Self-organisational processes may still be at an unconscious level, but they are functional in that they are driven by shared values and effective relationships. As a result, the school is able to react to changes as they occur in the environment. Processes in the school will be approaching the edge of chaos, able to change and develop quite rapidly. However, to keep up the energy to do this, the leader will have to be constantly motivating staff to take on yet another initiative, and for this reason, the sustainability of the configuration is probably medium term.

The 'creative' school will operate regularly in the edge of chaos zone. It will have coherence in management processes, which will match the complexity of the needs placed upon them, and in shared values and purpose. People will respect individual autonomy operating within such shared values. The stimulus for action comes both from the environment and from the school itself. As the school affects the environment by its own creativity, so the environment affects the school: there is co-evolution. Leadership in the

school exists at all levels, as top leadership designs the processes that will allow the right conditions for conscious self-organising behaviour. Because intelligence and leadership are distributed throughout the system – that is, both the nodes and connections in the system are strong – the system has requisite variety and longer-term sustainability.

At Enderby, Peter was moving in this direction. He was very aware at an intuitive level of organisational dynamics and self-organisation, and tried to provide the conditions for it to occur. Since change is a self-organising and emergent phenomenon, it cannot be pre-determined or controlled, but by understanding the dynamics, it can be nudged and shaped in certain directions (Morgan 1997), by detecting high leverage points and using the magnifying capacity of amplifying feedback. Stacey (1996) suggests that most creative self-organisation occurs in the 'shadow' or informal system of an organisation, where individuals generate ideas and amass support micro-politically until the idea reaches sufficient critical mass to break into the formal system. Managers should create a suitable context for such shadow systems to self-organise. Peter was aware of this, and like Stacey's (1996) 'extraordinary' manager, encouraged and intervened in the shadow system to produce such nudges. He created meaning for staff by explaining most actions and needs, and was in favour of employing minimum specifications (Morgan 1997) around which self-organisation could emerge.

Despite these leadership behaviours from Peter, Enderby could not be said to operate fully in the edge of chaos zone as a fully creative school. One reason was the preparedness of members of the organisation to operate in this way. Although Peter set the stage for self-organisation and it did happen in some parts of the school through the shadow system, the general culture had not developed to a position of respecting others' mental models and valuing diversity to facilitate the process at a conscious level. Insufficient trust produced dysfunctional cycles where organisational defence mechanisms were active. Clearly, if conscious self-organisation is to develop, school staff must be developed appropriately.

The configurations bear some strong resemblances to leadership capacity matrices developed by Harris and Lambert (2003). They identify different leadership capacities in four different types of school and some of the behaviours they cause:

- Stuck school: the head is autocratic, relationships are dependent and compliant, there is a lack of innovation and poor outcomes.
- Fragmented school: the head is laissez-faire; people operate individually, with ill-defined roles and responsibilities. There is sporadic innovation and static pupil achievement.
- Moving school: there is a purposeful leadership team and enthusiastic innovation, but often without full involvement, and there may be fragmentation. Achievement is improving slightly.

- Improving school: here the head, the staff and pupils are skilful leaders, and everyone shares a vision. Collaboration and collective responsibility make relationships and there is consistent innovation through reflective practice. Achievement is high or improving.

Harris and Lambert's focus here is on raising strategic fitness levels through employing different leadership factors, with distributed leadership seen as the most effective. They also show the configuration, especially of relationships, that goes with these styles of leadership. Although very much on comparable lines, this analysis does not stress the need for each configuration as it currently is to be in alignment to produce optimum results now. Hence, for example, autocratic leadership in the 'stuck' school is often seen as the way to produce results in a school where staff capabilities or motivation are low or where negative shadow relationships undermine innovations. The difficulty lies in ascribing causal relationships. Since the head and other leaders are part of the configuration, their behaviours may be the cause, or they may be the necessary response to other factors. As we have seen, though, development to a more effective leadership capacity must proceed at the same time by a process of co-evolution of the configuration.

Building capacity

You may recall from Chapter 7 that the strength of a complex network rested in part on the strength of the nodes in the network, and in part on the strength of relationship between these nodes. In school, this translates into the capabilities of staff and the power of the inter-relationships between them. Strategic fitness levels arise from the development of these, through factors shown in Figure 9.2.

I would now like to look at four factors that influence a school's ability to self-organise. They are:

1 structures and processes to nurture emergence;
2 qualities of people and their interactions;
3 individual alignment; and
4 alignment of the school, internally and externally.

The model shows people and their interactions in the central triangle, resting on the bedrock of relationships. It also shows that individuals build relationships, and relationships build individuals as shown in the last chapter. The triangle represents the processes through which the school achieves its outcomes. Outside the triangle are some of the structures and processes that facilitate self-organisation, as suggested in Chapter 7.

Looking at the internal pyramid, we see that it is built upon two factors – aligned individuals and effective relationships. Circular arrows join these

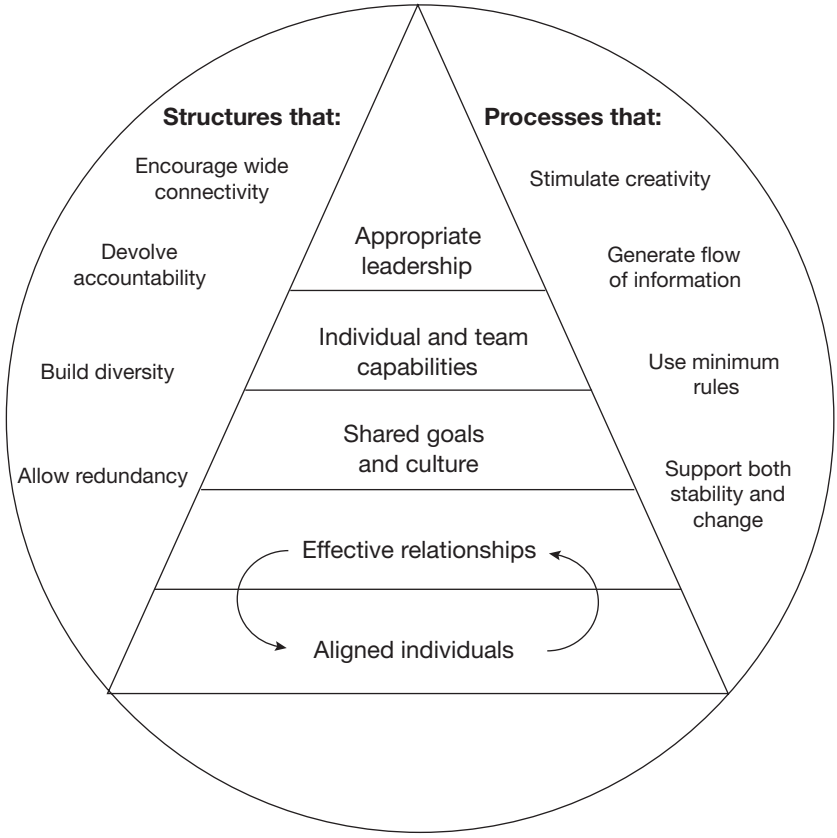

Figure 9.2 The fitness triangle

since they are interdependent, as we saw in the last chapter. Unless these two are functional and positive, it will be very difficult for beneficial self-organising processes to occur. Individuals need to be 'balanced' or coherent in themselves for effective relationships, free from inhibition and the 'games that people play' (Berne 1964), both political and psychological, and the kind of organisational defence routines documented by Argyris and Schön (1978). The actual relationships in the school will help or hinder this, and in a sense both must proceed forward together. Critical among the individual capacities needed is the need to respect others' mental models, and to understand how people construct their worlds (Chapter 1). This is especially so if diversity is to be respected and recognised as a source of strength.

We can then add shared goals. We are used to the idea of a shared vision, but goals are less generalised and offer something quite clear to aim for, something akin to 'strategic intention' as described by Davies and Ellison

(1997). What is essential is that there is a clear middle-term purpose that can be agreed upon, but at the same time leaving room for different interpretations of how to get there. Teams can then self-organise creatively around the shared purpose.

Individual and group capabilities are then brought together to address the goals. Technical subject and pedagogical skills are clearly central here, but there are other capabilities we often overlook. Amongst them are individual skills of self-monitoring and seeking and using feedback to improve teaching and learning, and developing effective ways of working together as a team.

Finally, in the pyramid, leadership, whether from a single person or many people, needs to be appropriate for the configuration that exists below it in the pyramid. In *Leading Minds* (1995), Gardner identified a continuum from direct to indirect leadership, identifying Churchill as a 'direct' leader, and Einstein as an 'indirect' one (although the distinctions are not mutually exclusive). He asks the question of who ultimately had the greatest influence. This continuum fits well with the idea expressed here of developing configurations. Where the substructure of the pyramid is not very evolved, then direct leadership may be appropriate; in a highly evolved school, deeper but less obvious indirect leadership may be the choice.

The strategic fitness level of a school, then, depends on its ability to self-organise to maintain alignment with its environment. To have an ability to do this which is sustainable involves possessing a high-order capacity for self-organisation and a coherent alignment of the self-organising factors. Wood (2000) says an organisation is aligned if its strategic intent and management processes are appropriate to the challenges of its environments, quoting a significant correlation between performance and degree of alignment.

Developing levels of self-organisation

The capacity of schools to develop ever more functional self-organising processes is an elusive idea, and it is important to remember that when self-organisation does occur, this leads to something new that cannot be fully predicted in advance. It is, however, a fundamental mechanism of group creativity, and if schools are going to be places which develop more innovative approaches to education, then it is vital that they achieve high levels of self-organisation.

As we saw earlier, self-organisation will happen, even if unconsciously – for example, in the development of a shadow system of relationships, with informal coalitions and nexuses of power. It is, in fact, within the shadow system that those things are discussed that people fear to discuss in more open meetings, or where ideas gain support before becoming more formally accepted. But the school also self-organises within the formal system, though often aided and abetted by covert political activity in the shadow system. In both cases, conversation is the medium through which ideas emerge,

whether it be a meeting of the senior management team, or a chance meeting in a corridor.

Developing higher levels of self-organisation, then, depends on developing powerful conversations through capable people and effective relationships – the nodes and interactions once again. What emerges from the countless conversational interactions not only will be generally unpredictable, but may not even survive. In Darwinian terms, it may not be 'selected', and this means we must accept redundancy: we cannot limit our conversations to what is definitely going to be productive because often we do not know that.

Kelly and Allison (1999) have produced an 'evolutionary fitness model' of five successively effective stages of self-organisation based on the development of seven characteristics:

1 Scale. Fitness can be measured at several levels. Evolution begins at the individual level and works upward to a macro-level of the whole enterprise.
2 Energy. Energy is needed to build and maintain patterns of interaction. The nature of this energy can define the possibility space of people's actions.
3 Learning. The way individuals, teams and whole organisations learn and adapt, and what experience has been shown in doing this.
4 Alignment. Micro to macro belonging and commitment levels, and distribution of power.
5 Present experience. The current results of the organisation's efforts.
6 Self-perpetuation: how well the organisation and its members mutually sustain one another.
7 Emergent system: how successful the enterprise is. What the significant feelings are of where it is going.

Levels of self-organisation

Broadly using the fitness levels and characteristics proposed by Kelly and Allison, Table 9.2 suggests how these would relate to three levels of school self-organisation. The writers suggest that each level, as it is attained, represents a plateau, a point of punctuated equilibrium before moving forward. I believe the process to be less regular than that, and that different characteristics may well emerge in different orders or in different subgroups of the school, acting as catalysts that draw the rest of the configuration forward.

In the 'underachieving' example, we see a range of factors self-organising unconsciously. Individual concerns are uppermost, and the energy in the system is probably driven by individual competition or fear of inspection and the like. The type of learning used to develop the system relies on courses and technical knowledge for individuals, if there is any drive for this. Staff

Table 9.2 Levels of school self-organisation

	Failing school	*Adaptive school*	*Creative school*
Scale/focus	Individual centred	Teams Relationships Whole-school needs	Wider education system and principles
Energy/drive	Weak/intermittent Individual competition External drivers	Sense of purpose Collaboration and competition	High information flow Working with diversity Double–loop learning
Learning	Individual Technical know-how Performance monitored by others	Self-assessing feedback Share emotions Teams define working rules	Seeks innovation Requisite diversity Creative approach
Alignment	Shallow commitment to school aims Stuck conversations	Commitment to team and school purposes Diversity and openness lead to new themes	Cross-functional teams High coherence Free-flowing dialogue
Performance	Struggle to survive Reactive 'Fire fighting'	Matches needs of environment Poised for change	Matches needs of environment Produces own change based on educational principles
Sustaining	Strong shadow system Low interconnectivity Leader tries to control	Shadow and formal systems integrate Team planning focus	Leaders as coaches Distributed leadership High interconnectivity

see monitoring, such as classroom observation, as something that is done to them for judgemental purposes, and they feel a victim of this.

The attitudes engendered by these factors lead into vicious cycles of shallow commitment to school aims and to 'conversations' that are 'stuck', repeating the same themes over and over. As a result, the school finds itself constantly having to react to events and finding it difficult to keep up. Self-organisation in the shadow system will probably have factions and splits and will be negative and dysfunctional. In the face of all this, leaders tend to feel out of control, vicious cycles predominate and staff feel dependent on others telling them what to do. The school is dysfunctionally stable.

Of course, it would be surprising if any school exhibited all the above characteristics as they are put here. In schools designated as 'underachieving' it would be quite wrong to suggest that this is due entirely to these internal factors: there are many reasons outside the school's control that can contribute to underachievement – even the definition of underachievement itself. Even where a school is underachieving, it is unlikely to be the whole of the school. Some departments, for example, may be performing very well. However, some of these characteristics may be contributing to poor performance, and the table can be used judiciously by heads to look at areas that could be developed.

The adaptive school model here shows processes that are leading to effective self-organisation in the formal system, and is therefore more consciously driven around team and whole-school needs by a sufficient flow of energy. The energy derives from a sense of purpose, mutual trust and the tensions derived from the co-existence of competition and collaboration. Team-based working is the norm, and at higher levels, teams openly share their feelings, rather than being defensive, and they actively seek to improve team performance by examining their working relationships. Teams and individuals will seek feedback on their performance rather than wait for it since they see this as a means to improve. Staff are aligned with school purposes, and the mixture of diversity and openness moves conversations and ideas towards new themes and creativity. Not only is the school keeping pace with environmental change, it begins to become poised for further change. The school is sustained and developed by formal and shadow systems interlocking, and a focus on team planning. The school has moved away from constant stability using empowered staff and teams.

In the third stage, the school not only reacts to environmental changes, but actually plays its part in creating change as it responds to its perceptions of education's wider relationship with its environment. In so doing, it is co-producing the agenda for change. With a high flow of information and diversity in the system, the school is constantly checking its own assumptions about educational purposes and provision. Diversity coupled with effective relationships means that the school has requisite variety to meet all new situations through high internal coherence. Leaders make full use of

the distributed intelligence of the school, and coach others to be leaders as leadership is distributed throughout the school. This is a school that operates on the edge of chaos and is continuously evolving.

These models, of course, contain much that is recognised as current management practice, such as developing teamwork, integrated with a complexity approach, which shows particularly the development of the three factors we have already looked at. Information or energy flow is what moves systems to the edge of chaos, where new forms may emerge; connectivity and diversity of agents enable this process. Where all three are high, but not too high, the conditions for the emergence of novelty exist, as does the requisite variety to respond to a complex environment.

Coherence revisited

In Chapter 5 we discussed ways in which the practices of the school aligned themselves with each other and with the external environment. Here I would like to take that analysis one step further, looking at it from a more psychological perspective, and from the point of both individual and organisation. I shall then develop the idea that coherence itself is subject to change.

Aligned individuals and effective relationships

We have already looked in some detail at relationships of a fundamental kind such as trust and openness, to which we will add professional factors below. Similarly, we are no doubt well aware of the professional capabilities staff need, but if excellent relationships are to happen, then staff need to be personally well-integrated people, who are well aligned and balanced. Without self-alignment, they are less likely to produce effective relationships at a fundamental level.

We also saw in Chapter 8 that the two processes of being and relating influence each other: much of someone's 'identity' at work derives from their relationships, just as their relationships are shaped by their identity. A useful way of looking at individual alignment is through the 'logical levels' model (e.g. Molden 2001). The model suggests that the behaviour we exhibit within our environment is merely a surface structure. The deep structures are mostly unseen and frequently unconscious (Figure 9.3).

Each structure influences the one above it, though to a lesser extent it may work in the opposite direction as well. For example, our beliefs have a very strong influence on what we feel capable of doing, while our values are often an expression of our deeper identity. People are said to be aligned when these logical levels are in alignment and support each other. Often when we see 'difficult' or inexplicable behaviour, it is because what people are being asked to do is not in line with their beliefs, their capabilities or their identity – 'It just isn't me, doing this!' Most frequently, as leaders, we

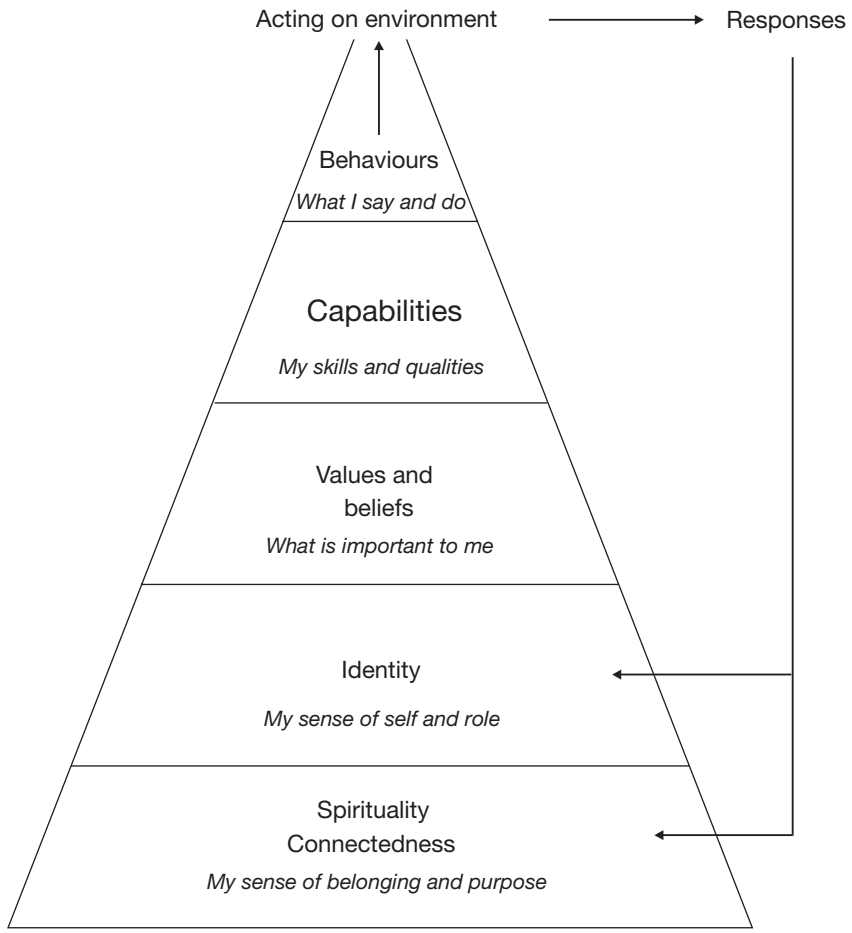

Figure 9.3 Logical levels

try to tackle anomalies at the behaviour level only. We suggest what people should do, whereas an intervention at a deeper level might help people more.

The deepest level, connectedness, denotes a sense of belonging to and affecting something larger than oneself, a purpose, and suggests that our relationships are part of this deepest level. Since the environment in which our behaviours occur includes other people, we can see that a feedback loop occurs from our behaviours, to their responses, to our sense of connectedness. By working in these logical levels, then, people can become more congruent, more 'true to themselves', and more effective. They can have coherence.

The key point for leaders is that if you want to help someone or some team to produce sustainable change, you need to address it at a deeper level than the one where it exhibits itself.

School coherence

The same process can be used to identify how coherent the school is in its purpose, and is useful for deciding at what level any school problems should be addressed. The process will identify where there is incongruence or dissonance. Here is the way the levels can be seen in relation to the school organisation.

Environment	Here the school can look at how what it does affects its environment, locally and nationally. This also means the kind of environment it is creating, both physical and ethical, for students to learn in. It also includes what, as a school, we think about 'the world out there'.
Behaviour	How do we behave, towards colleagues, towards students, towards parents and so on? Do colleagues make their own decisions? Do office staff answer the telephone in a courteous and welcoming manner? Do pupils take responsibility for their own learning? Are actions in line with the philosophy of the school?
Capabilities	Do we have all the skills and knowledge on the staff that we need? Do we recognise and use people's strengths? Do we develop people's skills appropriately? How do we use other resources to add to the school's capability? How do our capabilities support our vision?
Beliefs and values	These are reflected in the philosophy and culture of the school. The questions to ask here are about the degree of alignment people actually have with the 'espoused' values, and how these beliefs and values reflect the school's mission and vision. For these beliefs to really operate, they need to be expressed in the everyday behaviour of management and staff. Without this, published statements and observed practice will contradict each other. For this reason, beliefs and values of the school need to be drawn up with the staff.
Identity	This is the level of vision and mission. It defines how the school sees itself and what it aims to do.
Interconnectedness	At this highest level, the school is very aware of the larger systems of which it is a part, seeing how it fits into the wider community, the education system, the school's eco-system and the longer-term education of its pupils.

We can use this model to quickly analyse our thinking about our school or, with slight modification to the questions, teams within the school. It will

help us to have a clear view of our purpose, and whether our beliefs, values, capabilities and behaviour actually reflect that purpose. As a tool for aligning purpose with practice, it adds to the understanding of alignment of practices that we looked at in Chapter 5. Again, where there is dissonance, this is best addressed at a level higher than where the dissonance occurs.

Constant search for coherence

Coherence is not something that once attained remains. Conditions are always in the process of changing, and elements move out of alignment. For example, a school that has been well aligned to one set of environmental conditions can suddenly find that what it is doing no longer 'fits' current demands. Many schools found this as new demands of accountability were applied in the 1990s; others may find this if new demands for integration and creativity emerge in the next few years. Purposes, personnel, pupil intake, and a host of factors can change and promote the need for a new coherence.

It is here that we can see the close connection between self-organisation and coherence. Coherence is a moving target. The way a school moves forward is through progressive levels of coherence as it moves into and out of alignment in some way. Moving out of alignment stimulates a tension that triggers internal self-organisation that moves the school to a higher level of coherence. That is, if the misalignment has been noticed. Where it is not, then the school will become so significantly misaligned that it will be difficult to move to coherence.

This whole process was evident at Beldene. Before John arrived as head, there were concerns that the school was coasting. Internally, there was harmony, but there were concerns that this was not producing what was necessary to produce the results of which the pupils were capable. When John arrived, his concern for radically improving the state of affairs caused the school to move towards the edge of chaos, breaking up the 'harmony' that existed. But then a new coherence developed, much better suited to the demands of a school in the 1990s. People understood the need for results commensurate with student abilities, and their accountability for attaining them. After a few years of such coherence, however, from this new position, many staff, and in particular heads of department, were wanting a more devolved role. A new misalignment was emerging as their feeling grew that they could produce the results better if more was left to them in devolved leadership roles. Similarly, a change of style by the head can cause a misalignment to which staff then start to adjust.

Distributed intelligence and leadership

We saw earlier that the response capacity of a system depends on the strength of the nodes and the degree of inter-relationship between them and that these factors enable requisite variety in the system. In a school system this

can be seen as how dispersed leadership and knowledge are: dispersed knowledge without the authority to act on it can be wasted. Similarly, if all authority is placed in only one person, the responses it can make are limited to that person's repertoire of responses and understanding of the situation: there may well be an insufficient range of possible responses.

There is currently a great interest in the idea of distributed leadership, though interpretation of what it is and entails is varied. Gronn's (2000) analysis is that in organisations there is a range of leadership distribution, from highly focused (i.e. probably vested in one person) to distributed through the organisation. Gronn's linking of this continuum with various stages of evolution of the organisation gives some support to the typologies above. He refers to the ideas of Gibb (1954), who saw leadership as a group quality, where leadership could pass from one to another as situations changed. Thus there is an emergent view of leading, and whether 'leader' or 'follower', it is a transient status.

Gibb highlighted two ways in which distributed leadership can occur. The first concerns individuals, where the degree of distribution is a measure of how frequently each member acts in a leadership capacity. The second is a more systemic method, where leadership is distributed into patterns of group activity and where interaction makes leadership some kind of joint effort rather than embodied in one person.

There is much evidence of Gibb's first type of distributed leadership happening in English schools, as senior leadership teams, key stage leaders and subject leaders are, as their changing role names indicate, being expected to take stronger leadership accountabilities. Harris (2002), for example, found distributed forms of leadership in schools facing challenging circumstances, where heads consciously worked on distributing leadership. This kind of distribution can sometimes be mainly about delegating some of the head's responsibilities to others, in order to make the head's task simpler: a team of leaders simply divide up the work to be done. Delegation is the fundamental basis of this distribution. Although this does distribute leadership, it is still based on the idea of one person leading.

Often, however, it is not as simple as either . . . or. Specific leadership functions may be devolved, but there may also be a tendency towards collaborative decision-making, which moves more strongly towards Gibb's second category. An interesting survey by Kimber (2003), for example, showed the extended development of leadership teams in small secondary schools, where an accent was put on working together and supporting each other. Middle managers were also able to feel their leadership role more fully, which had not apparently been the case before. Nonetheless, a feeling of clearly defined hierarchical levels of leadership – albeit in teams – permeates the report.

There is a need, if we are to engage the full capacity of variety within the school, to understand processes whereby the full amount of organisational knowledge can be accessed, and where people can lead according to their

knowledge. It is also important for us to remember that leadership can be informal as well as formal. As Robinson (Gronn 2000) has defined it, leadership occurs 'when ideas expressed in talk or action are recognized by others as capable of progressing tasks or problems which are important to them'. This understanding of leadership brings me back to the role of talk in the organisation and complex processes of relating. Distributing leadership fully may well lie in the school's ability to promote 'free-flowing conversation' up, down and across the school. In this way, distributed leadership is a strong contributor to school creativity, rather than a delegation of school leadership tasks.

Such distribution, and the processes that help it, means that influence moves about the relationship network in many directions. For example, as we saw earlier, strategy can be 'skin-driven', where the 'skin' of the organisation is its outer membrane, those people who work directly with clients (Deering *et al.* 2002). It is the teachers, support personnel, secretaries and site managers. They are people who can sense certain trends and needs that should influence strategy. The extent to which the school can respond to their knowledge reflects its spirit of systemic leadership distribution.

When we are looking at leadership in the school, then, it is better to see it as a whole-school function. Spillane *et al.* (1999) have said that leadership *in school* should be the unit of analysis, looking at how leadership is distributed among positional and informal leaders. To this I would add the way participation in free-flowing conversation enables the school's collective intelligence to be freely accessed.

In this chapter we have examined the idea of strategic fitness as one that indicates the school's internal ability to self-organise in response to environmental demands, and the creative school as one that has a sustainable capacity to do this through high-quality people and relationships and a balanced configuration.

Key points

1 Strategic fitness is the capacity to identify and respond to environmental needs through internal self-organisation.
2 The alignment of the factors in the school needs to be such that optimum results are obtained with its present capacity for self-organisation.
3 The 'creative' school represents the highest capacity for self-organising behaviour.
4 Building capacity for effective self-organisation depends on building qualities of people and interaction, individual and school alignment, and structures and processes to nurture emergence.
5 Coherence rarely persists. In some ways, change is associated with a moving out of and into coherence, producing tension and resolutions.
6 Distributed leadership is a mark of the highly evolved school, and helps the school to tap into its collective intelligence.

Further reading

Alma Harris and Linda Lambert's (2003) book *Building Leadership Capacity for School Improvement* explores ideas of distributed leadership in a thorough and readable way.

Most books on NLP will give further understanding of the logical levels model.

As suggested in the text, Kelly and Allison (1999) go into considerable detail about different levels of self-organisation.

Chapter 10

Manage for creativity

What I have termed the creative school, then, represents a highly evolved configuration that is constantly able to respond to the needs of the environment, but also to stimulate its own actions based on its own clear understandings of wider educational issues. In this sense, it is a leader and to some extent sets the educational agenda. When many schools achieve this, there is co-evolution in the school eco-system. Using complexity ideas, somewhat speculatively I would now like to consider briefly some of the features of such a school.

Lessons of complex systems

At this point it might be useful to summarise some of the factors complexity theory might suggest would be found in this most advanced configuration. As the book has progressed, ideas from complexity have been gradually introduced, and now might be a good time to summarise these. The main ones are:

1 Complex behaviour can arise from agents following simple rules. This, plus awareness of intent, can enable adaptive behaviour.
2 The power of a network comes from the capacity of its nodes, and the effects of their interconnection.
3 Requisite diversity amongst agents enhances the creative effect of relationships.
4 When a system is far from equilibrium it is at its most creative. Edge of chaos conditions exist when the flow of information or energy, the connectivity of agents and the diversity of agents are at a particular level – high, but not too high.
5 At the edge of chaos many new ideas can emerge but many will not survive. Redundancy, in the form of non-essential activity, is therefore necessary.
6 The leader is part of the configuration.
7 The emergent behaviours resulting from complex relations are unpredictable.

8 People are at the same time forming and being formed by the overall pattern of behaviours.
9 The outcomes of the school are co-created by all the interacting agents.
10 Conversations are central to creativity in organisations as different themes self-organise.
11 Free-flowing conversation tends to be at the edge of chaos and pregnant with possibilities. Repetitive conversation tends to be stuck in stability and equilibrium.
12 To respond to complexity, a system must itself have requisite variety.
13 Coherence is achieved when all parts of the system are aligned.

We can now look at how these support some current practices, and perhaps suggest others, that might occur in the highly evolved school.

Coaching

In recent years it has become usual to suggest that leaders use a range of leadership styles as appropriate for specific situations. Goleman *et al.* (2002), for example, relate the six styles defined by the firm of McBer and Co. to emotional climate. They are:

Visionary (Authoritative)	Used when a new clear sense of direction is needed
Affiliative	Used to create harmony and good relations
Democratic	Used to gain commitment and input from staff
Coaching	Helping to build long-term capabilities
Pacesetting	Taking the lead and focusing on high-quality results
Commanding (Coercive)	To turn round a failing school, or to give direction in an emergency

These styles are stressed strongly in headteacher development in England with the idea that there is no 'best' one and that the leader should be able to draw on them as appropriate.

In the creative school, where capabilities and distribution of leadership are high, and where staff show initiative and actively seek development, a coaching style of leadership may be very valuable, since it helps people to lead themselves. However, coaching is seen as many things: as Goleman says, it can easily become micro-management.

There is a wide spectrum of possible coaching behaviours, ranging from telling someone what and how to do things, through to using a questioning approach (Landsberg 1997). The type of coaching I am suggesting here lies very much to the empowering, deep learning end of this spectrum, where thoughtful questioning elicits understanding in the coachee. Coaching is about 'unlocking a person's potential to maximise their own performance. It

is helping them to learn rather than teaching them, and involves an optimistic view of the capabilities people have' (Whitmore 2002: 8). To achieve this, Whitmore believes the manager/coach should concentrate on two main goals. First, a good coach will help you to be aware, increasing the extent to which you perceive and understand what is happening around you and what is going on within you. Second, a good coach will lead you to accept responsibility for your own thoughts and actions because you choose them. Working on these implies a questioning approach that leads people to their own conclusions: the coach, in fact, does not even need to be an 'expert' in the area being worked on, so long as they have the skill to elicit understanding. Such an approach goes very well with distributed leadership. Coaching partnerships can be widely spread in the school, and self-organised: they need not be hierarchical and can change according to situation. As Flaherty (1999) says, coaching should lead to self-generation, as people find their own ways to improve, and to self-correction as they learn to adjust their own behaviours independently of the coach. The overall outcome is long-term excellent performance.

Requisite planning

Creativity and innovation need to be integrated with strategy. As Jervis (1998) puts it, strategy must challenge creativity, but also creativity and innovation should drive strategic change. This inevitably involves some risk management, and a long-term view.

This relationship challenges the way we currently do things and raises the question of how we integrate standard strategic choice planning with a creative element. This applies to whole-school development plans but also to teachers' plans for work in the classroom. At the whole-school level, there are perhaps three possible ways strategies arise. The first is one where the full details of what needs to be introduced are already known, through either a school or a government decision. This can then be planned for in some detail, with modifications as time passes to adjust for the inevitable chance happenings that throw the programme off course. This is our usual approach.

A second situation could be one where we knew in a general sense what was needed, but were not at all clear how it would look when we had it. This could, for example, be a felt need to take a different approach to some aspect of work, such as to make more effective use of the child's social context in learning, or to introduce a programme to meet a perceived need, such as to improve self-esteem.

A third perspective is where creative processes simply develop from the ground up. As we have seen, the process is subject to selective forces, and we have to be prepared for some such ideas just to fade away, and for others to gain momentum, or critical mass.

The first situation presents little problem other than unpredictable happenings, and the shorter the process the more likely it is to be successful.

The second situation needs time for thought, trial and error, brainstorming and other techniques as the way forward emerges, and cannot therefore be planned ahead in detail. The planning for this scenario could simply be based on a statement of a required outcome, the approximate timescale, and the team involved. This leaves the way to the outcome up to the team as solutions self-organise, and enables their creativity.

The third situation is more problematic, and strategically is more about climate than about planning. However, this climate can be reinforced by strategic intention. According to Jervis (1998), some companies successfully demand innovation, as well as enabling it. They do not dictate what, or how, but encourage thinking out of the box. On one recent visit to a primary school, the head told me how the management team had decided to include creativity in the performance management objectives for all staff. Each was expected to undertake some aspect of their work in a different way during the year. Here strategy is clearly challenging people to be creative.

The converse is that outcomes of creative thinking need to then inform strategy, and unfortunately they do not happen to order or to time. Somehow we have to build flexibility into strategic planning, first to recognise these processes as important and time-consuming, and second to accommodate any promising initiatives. At the moment, these activities seem to go on outside and alongside the school's strategic planning.

Two things in particular need consideration. The first is to allow for all three processes in strategy, and to use a level of planning that is requisite for each – that is, one that correctly identifies degrees of certainty and of emergence. The second is to balance these processes appropriately. The certainty of the rational planning model can seduce us into using that at the expense of the others, but as we have seen earlier, we need some form of redundancy or organisational 'slack' if the more emergent strategies are to be enabled. To commit the school fully to a series of rational plans will not leave this space.

Individual teacher plans can be approached in a similar way. We have seen how teacher–pupil interaction is a two-way gesture–response activity, and that learning is negotiated through this process. This means that teachers need to constantly re-adjust in real time to what is happening in the classroom. Over-planning of lessons may actually be counter-productive to this process, particularly among skilled and experienced teachers. Thus once again, requisite planning, rather than 'one size fits all', is preferable, allowing the teacher to 'steer' the lesson towards intended – and perhaps sometimes unintended but valuable – outcomes.

Job descriptions

Attention to the way in which we formulate job descriptions can be an important way in which we establish a vision of promoting creativity. Many job

descriptions, in their concern to make all accountabilities clear, become a list of prescribed tasks. For example, a job description for a subject co-ordinator might begin with defining to whom the post holder is accountable and a general purpose of the job – e.g. 'to lead a team of tutors' or 'establish conditions for effective learning'.

Often there then follows a list of tasks, for example 'to observe classroom practice', 'to plan a syllabus of work', 'to evaluate the implementation of a policy', 'to lead the team to raise attainment through target setting'. The list of tasks does underscore every responsibility and accountability, but often closes down creative options, as in the target setting example, by telling people *how* this job is to be done. Such lists also usually fail to specify good performance and outcomes. For example, 'observing lessons' or 'planning a syllabus' of work can be done at various levels of effectiveness and with several results.

Reddin (1989) makes a very plausible case for writing job effectiveness descriptions rather than job descriptions, working from the idea that effectiveness is the extent to which the output requirements of the job are achieved. Effectiveness areas of a job are the key output requirements. As Reddin says, we are not paid to be busy, for inputs, for bureaucracy or for simple activity. We are paid for outputs and results. Most job descriptions, he says, are a list of inputs, as in the examples above. Getting clearly to the outputs of a job is not easy sometimes, but the effectiveness area can often be arrived at by asking a series of 'whys?'. For example, 'to observe classroom practice' might lead to the following:

'To observe classroom practice.' Why?
'To feed back to the teacher on their strengths and weaknesses.' Why?
'To help them to see where they are effective and less effective.' Why?
'To help them to determine ways to improve their teaching.'

This is the output, the effectiveness area. To go one step further and to say that this is to improve their performance would be a step too far, since this is not within this post-holder's power. Too many other things may intervene. This process also clarifies why certain tasks are being undertaken. There could be, and sometimes are, several reasons for using the effectiveness areas as a good basis for performance planning.

Reddin's view of job descriptions based on outputs resonates with ideas about creativity and emergence in this book. Such job descriptions would be much less prescriptive about the means to achieve desired outputs, leaving the way open for experimentation and new ideas, with the possibility of several ways to achieve them. Similarly, outputs need not be stated with too much precision, and are more likely to take the form of 'strange attractors', resulting in outcomes within a desired range, thus leaving more space for emergence. Such a job description would therefore support Morgan's (1997)

notion of using 'minimum specs' to allow the freedom, space and redundancy for self-organisation, and to avoid over-definition and over-control.

Performance management

In 2000 performance management became mandatory for schools in England. Briefly, the process involves an annual cycle whereby a teacher agrees objectives with their team leader, and is monitored and supported in the achievement of those objectives. Progress in these, and general performance, are reviewed at the year-end, with a written report being prepared. During the monitoring phase, there is to be at least one lesson observation.

Several changes to the focus and spirit of performance would add to the school's ability to generate innovative practice. That performance management targets should stretch people without going too far outside their capability zones (or comfort zones) seems sensible, but if this is to encourage innovation, then the strategy should give focus without being too narrowly restrictive about outputs (Jervis 1998). Nor should the way to meet targets be defined, thus allowing creative approaches to meeting them. This is a strange attractor once again and with flexibility about means, and a degree of flexibility about ends, processes of self-organisation as time goes on may actually produce slightly different, and better, ends. The setting of a somewhat 'fuzzy' target is rather at odds with the usual concern for SMART targets (specific, measurable, achievable, realistic, time-bound) but may be more realistic for innovation, where actual outcomes cannot be known in advance. Such a 'fuzzy' target will give direction without being over-specific about what may emerge.

Performance management will only be really effective in promoting better teaching and innovation if it is firmly based on trust and dialogue. Anecdotal evidence would suggest that currently, at least, this is not the case. Two measures would improve the situation. First, to clearly detach the system from performance-related pay, of which it is currently a component. There are other ways to determine performance-related pay. As it is, trust is difficult when the process is seen as a judgemental one. Levels of anxiety engendered for many are too high, and outside the range of 'contained anxiety' discussed earlier.

Second, more use could be made of teachers' strengths in the judgements. As it stands, the process is a deficit model where 'areas for development' are to be brought up to standard. Strengths are 'to be noted', but there seems little rationale for this other than to give praise – a worthwhile function, but there should be more to it. First, a teacher's strengths are probably in the realm of 'unconscious competence', and drawing them into the conscious sphere may enhance their use by the teacher. Second, research has shown that further work on people's strengths rather than their weaknesses is more effective in raising their performance (Buckingham and Coffman 1999), and identifying people's talents is therefore crucial. Add to this insight the fact

that we usually enjoy doing what we are good at, and this suggests that balancing performance management objectives towards the further development of strengths would be motivating, would keep anxiety within an acceptable range, and make the process very positive. Again, wisdom is needed. Significant weaknesses that are handicapping children's learning will need addressing, though deeper levels of weakness should be addressed using other mechanisms.

Finally, the reviewee should be encouraged to determine much of the feedback that will be needed to monitor the way any innovation is moving, seeing feedback as a monitoring tool and not, as is often the case, as a judgement. Thus taking a proactive role, a reviewee will design their own feedback processes for information, and will ask for team leader feedback for the same reason.

Making performance management a much more positive experience in such ways as this would have the effect of putting into action the amplifying cycles of trust shown in Chapter 8 and would enable schools to move away from 'playing safe' to being more innovative.

Self-organising teams

Many companies outside of education have moved from functional or departmental organisation to team-based working. This means that teams have within them varied knowledge and skills, which they use to produce a full output (Katzenbach and Smith 1993). Since they are cross-functional teams, they have the ability to move out of their individual specialisms and extend their work into the 'white spaces' – the spaces on paper which fall between the different functions or specialisms

In secondary schools, teams are still usually organised in subject departments and separate pastoral teams. In primary school, this type of organisation is less strong since teachers tend to teach a range of subjects, though in the last decade there has been a tendency to organise the work along subject lines in response to the policy context. Before that, there was a tendency for primary teaching teams to address the whole learning experience of the children, often using project work. One of the drawbacks to this was that often the teams did not have the required range of knowledge to ensure that the full range of learning experiences was included.

The organisation of the school into subject teams and curriculum serves to maintain the status quo of what educational provision is about, and is also strongly influenced by government policy and the qualifications system. This can mean that the school's ability to introduce important educational experiences for children may be impeded: the experiences might fall into the white spaces between subjects and are therefore no one's area.

Revolutionary curriculum, such as that proposed by the Royal Society for the Encouragement of Arts, Manufactures and Commerce in *Opening Minds*

(Bayliss 1999), could thus find it difficult to get the kind of organising that will enable it. This is a competencies-based curriculum, based on a framework of:

- competencies for learning;
- competencies for citizenship;
- competencies for relating to people;
- competencies for managing situations; and
- competencies for managing information.

As Bayliss notes, some say such a curriculum is impractical, as it is not based on traditional subject lines. Here we are in thrall to what Tye (2000) calls the 'deep structure' of education, with its implicit assumptions. At the time of writing, the Opening Minds project in ten volunteer schools seems to be going well, but the project has found it quite difficult to get teachers to think outside subject boxes and traditional timetabling structure, though there is a lot of evidence that schools are keen to explore new solutions to the curriculum (RSA 2002).

Some examples of ways of team working are shown in the RSA's 'project update'. In one school, a self-selected team of six teachers teach an integrated and project-based curriculum for this work in Year 7, using half-day blocks, while five subjects are still taught separately. Another school started with 120 students working with six teachers on projects, where maths, science and design are linked, as are English, business and languages. According to the report, staff welcome new opportunities, the lack of isolation, and 'bouncing ideas off each other' (p. 6). Other schools are using the competencies framework for older students in a variety of ways.

In these schools there is clearly evident some movement towards cross-disciplinary teams which work on, as it were, a total educational experience. These are probably (it is not clear from the report) self-organising teams, in the sense that they can work together to produce experiences for their children which are appropriate for them, without external direction. One school's team was self-organised in that it came together voluntarily.

In similar vein, Day *et al.* (1998) have proposed a new management model based on earlier work by Whitaker. In this model, staff roles are flexible: rather than having specific responsibilities only they are able to gravitate into temporary task teams for specific projects, disbanding once the project is complete. Within such project teams, they say status would be more equal and contributions would be according to skill and experience.

This seems to me to point the way to much greater use of self-organising teams. Such teams go beyond self-managed teams and use the complexity idea of 'swarming', where networks form, act and then disband when the particular problem is dealt with or the task is accomplished. Swarming is a dynamic process of connection – of the right people at the right time. This contrasts with our usual line-managed process by which we conduct our educational

business. Perhaps more use of 'swarming' will be a help to creativity and innovation in the school. However, this form of creativity cannot always be demanded from above, or even structured from above. Teams self-form around an issue or an idea that comes up in real time. Self-organising teams need not be leaderless teams: rather they are an expression of the school's capacity to organise spontaneously in various configurations to address problems, challenges or new ideas as they arise. The question for leaders is, how do our structure, practice and values enable this process to arise?

The use of swarming techniques helps the organisation to be readily adaptable and creative, but the more usual hierarchy may need to exist alongside. The advantages of each can then be combined to support the dual need for stability and change.

Communities of practice

We briefly considered Wenger's idea of communities of practice in Chapter 6, where the actual practice of the organisation involves those with direct situation awareness modifying official policies to achieve their outcomes. To paraphrase Wenger in a school setting, we might say that if we believe the productive people in our schools are those who very diligently carry out set policies and processes, then it would make sense to construct ever more detailed prescriptions of what to do. But if we believe instead that people who participate inventively in teaching processes that can never quite be fully captured by our policies and directives serve our school purposes better, then we will lessen the amount of prescription and give more scope for inventiveness. We will make sure that those communities within school that develop their own good practices are nourished, and we will value the work of building those communities. As Wenger says, this seems common sense, but we ignore it frequently, and often work against it. How many heads, for example, spend enormous amounts of time sorting out problems created by staff who adhere too literally to, say, the school's behaviour policy, and who have been unable to exercise their own good judgement in the situation?

Wenger's is a social theory of learning, rather than an individual process. It sees learning as a natural and social phenomenon, achieved by participating in the practices of social communities, and at the same time as a form of belonging. We all belong to many communities of practice, in families, work teams, leisure pursuits and so on, and our sense of identity may well be different in each.

Wenger identifies four components of a social theory of learning:

- Meaning — Social participation gives us a way of experiencing and talking about our life and the world as meaningful. This is learning as experience.
- Practice — Sustaining mutual engagement in action by talking about shared frameworks, etc.

- Community Learning through belonging to enterprises worth pursuing and where we are recognised as competent.
- Identity Learning that changes who we are – we are constantly developing our identity in the context of communities.

Learning, then, is part of our participation in such communities – the key stage or year team, the department or the school in general – and sustaining these interconnected communities is important to help the organisation to learn. The community is a context for new staff to learn in, and also both for the acquisition of knowledge and for exploring new insights – if it is a good community of practice.

Of course, if the community has become 'stuck' in its conversations, exploration and innovation may become stagnant. The effects of this may not show for some time: results may be good and giving no cause for concern. But eventually they may begin to fall behind, first in comparison with similar schools and then in comparison with all schools.

The constellation of communities in a creative school is likely to be typified by free-flowing conversation, while the community learns through:

1 evolving forms of working together;
2 understanding and fine-tuning what their work is about and their accountability for it; and
3 developing their repertoire of approaches to their work.

The three aspects of learning are interdependent and evolving. New members coming into the community can create new opportunities for new ways of working together, and these can lead to new understandings about the nature of the work and the approaches to use. As in other complex systems, the community exhibits a combination of perturbability and resilience, which together mean adaptability.

So what are these communities of practice in a school? There is no simple answer to the question, since such communities are emergent social structures. The formal existence of a team or department does not necessarily mean they are a community of practice. Communities may form around disciplines, especially in secondary schools, or around pedagogical practice, and people may belong to a number of communities.

Whatever the form, it is important, from the point of view of connectivity, that such communities do not become isolated and unaware of the rest of the school. McDermott's (1999) useful paper proposes a 'double-knit' organisation where cross-functional teams are linked by members' affiliations to communities of practice based on disciplines. Thus while the team focuses on the task, the community of practice to which each member belongs is a group that shares knowledge and learns together. Teams and communities are different types of groups. Teams are brought together to accomplish a

specific goal, whereas communities develop organically and often form around 'identity' – that is, the special interests of members, and their purpose is disseminating knowledge rather than accomplishing a specific task.

In school, we tend to let the two purposes run together in some ill-defined way, and research is needed to find how this works in schools. However, McDermott's paper does lead to a useful way of understanding. If, for example, a multi-disciplinary team were to be delivering a project, the scientist in that team would sense their 'identity' as a scientist, and look for support, development and new practice in this to the science community, whilst adopting responsibilities for achieving the project's goal alongside the rest of the team. Nor should the community be confined to the school – learning from journals and other schools should be encouraged. This dual structure would lead to both learning and outputs, and would also enhance, through the community of practice, a vertical connection throughout the school. The two processes would have the effect of increasing the connectivity within the school.

In summary, it would be useful to:

- be aware of communities of practice in the school and what their conversations are;
- nurture them by recognising their importance;
- use communities to spread connectivity;
- encourage community learning by extending them beyond school.

Accountability

The highly evolved school and the teams within it will recognise the need for accountability, and will want to be in control of their own accountability. They will develop monitoring and evaluation systems that enable them to use clear feedback to help them to move forward. In other words, they will be proactive, and will not see accountability as a threat.

Devolving accountability to teams and individuals is a measure that would remove some of the mistrust that surrounds imposed measures of accountability, and encourage a creative mindset. This is not, of course, a measure that individual schools can take independent of central government, but as the latter promotes school self-evaluation, it may well be possible. It may also be possible to encourage this even though external processes of accountability are still being imposed. The question is, what form should such responsibility and accountability take?

Stacey (2001) describes current quality assurance programmes in education where teachers are required to set overall programme objectives, followed by learning outcomes to be achieved in each teaching session. The design of each teaching session is then such that it delivers the outcomes. Students can know in advance what they are to learn and check whether

they have learned it. In addition, teachers monitor each other's classroom performance and students complete forms to say how well they achieved the course outcomes. Here he is speaking of universities, but similar structures apply to schools, including targets to achieve.

When we apply the complex responsive process ideas to learning suggested in Chapter 8, such systems become suspect ways of assuring quality. If learning is a relational communication action, it is about negotiating and transforming meaning through an emerging pattern of gesture and response. What that transformation actually will be cannot be predicted in advance. The approach again exposes its Newtonian roots.

Stacey proposes that in these circumstances we cannot meaningfully speak of responsibility and accountability in terms of achieving targeted outcomes. As teachers engage with their students and their learning, responsibility and accountability

> mean the ethical, moral requirements to take responsibility for one's actions and account to one's fellows for what one is doing. The requirement is to account for the next gesture or action, quite apart from the consequences because they cannot be known when they depend as much on what others do as on what one does oneself. Quality actions are not actions with known consequences where one takes responsibility for the consequences, irrespective of the actions. Quality actions are actions that both those carrying them out and those affected by them can accept as ethical and moral in themselves, and such acceptance implies a process of negotiation.
>
> (Stacey 2001: 230)

This seems to me to make sense. Nor does it mean that outcomes have no importance. As Fullan (2001) has said, looking at outcomes in some detail, with 'assessment literacy', clarifies what needs to be accomplished and acts upon the moral purpose of the school. This is still a systems-based perspective, where outcomes feed back to indicate the direction plans should take, i.e. what our intentions and next actions should be. It does not necessarily presuppose outcomes as an accountability measure.

The point I am making here is that accountability is another area where creative schools will engage in deep thinking. Rather than simply accepting centrally determined measures, they will develop and negotiate their own, to work alongside required ones, or, as circumstances allow, replace them.

Conclusion

In proposing the above qualities of a highly evolved school that has the ability to sustain its performance over time, I am not attempting to prescribe what should happen. I have been at pains to point out the dangers of prescrip-

tion and the importance of configuration, and doubtless the self-sustaining creative school will exist in many forms. These are simply some of the approaches already in existence that might support sustainable development. More important is that the qualities of complex systems as listed at the start of the chapter may also act as a springboard for individual schools to develop and that even in the highly evolved school, these would be tendencies, probably strong ones, but not the only ways of working.

Key points

1 Several practices that would support creativity in the highly evolved school have been outlined.
2 Coaching as the unlocking of people's own thinking could be a very useful and distributed leadership style.
3 Planning and creativity both need to contribute to strategy, and ways to integrate those through requisite planning need to be considered.
4 Job descriptions and the way they are written can encourage creativity.
5 Performance management systems can encourage creativity if they are based on trust and development, pay more attention to people's strengths, and see the process as feedback, not judgement.
6 The use of self-organising and cross-discipline teams can have the effect of strengthening connectivity and opening new areas for creatively thinking about the curriculum.
7 Recognising communities of practice and the inventiveness they can add to teaching processes will lead to less prescription and to building the strength of such communities. It is important, though, to be aware of the kinds of conversation going on.
8 For creativity to flourish, accountability must be seen to encourage it, and must be agreed and adopted by the school as its own process.

Further reading

Whitmore's (2002) *Coaching for Performance* is very readable and, to me, is based on sound principles. However, there are several other recent books on coaching. Flaherty's (1999) book is very thoughtful and more theoretical, while Starr's (2003) *The Coaching Manual* is a clear and practical guide to the process.

Wenger's (1998) *Communities of Practice* is the central work for this perspective. Although quite theoretical, it is approachable and readable.

Chapter 11

Value your intuition

I would now like to draw the book to a close by returning to Chapter 1 and the questions of cognition and wisdom that were raised there. I want particularly to point to some qualities of thinking that are necessary to help us handle complexity, and to develop creativity. Sternberg (1988) has pointed out that although wisdom, creativity and intelligence overlap, they are different, and I hope the chapter will show this. First, I will briefly examine why cognition is important in school leadership, and what forms it may take. Then I will briefly illustrate different aspects of cognition as derived from my own research with heads (Raynor 2000) and finally I will discuss some of the issues that arise.

The importance of cognitive abilities

The changing face of educational leadership means that heads need greater intellectual ability for management than formerly, demonstrated in three specific ways:

> You've got to be able to handle . . . the finances, you've got to understand the implications of political nuance, you have to be an infinitely more political animal than most primary heads ever were . . . and I think you have to be on top of the game philosophically, too, because people are asking questions that nobody ever asked you before, even if it's only once every four years! So I think generally speaking we need people of high intellectual ability, but with an awful lot of personal skills as well. (Inspector L)

This inspector stresses particular knowledge and understanding, but implies that the necessary intellectual abilities are not narrow, ranging as they do over the kind of rationality needed for financial planning and management, to the abstract thinking associated with philosophy, to the wisdom and pragmatism needed for working with people. Accountability implies that every decision has consequences, and the cognitive foundations of such decisions are very wide.

The cognitive abilities associated with school leadership, then, are unlikely to be simply those measured by intelligence quotients. Although people talk generally about someone being intelligent, this can mask a number of different factors. This may be the reason teachers at one school had varied perceptions of the head's general intelligence. Some staff indicated that he 'might not be so clever' (Senior teacher) while others assessed that he had 'a quick brain' and that staff 'can't get one over on him' (Head of department). At the same time all agreed he had a remarkable memory and an uncanny recall of detail: his memory was almost legendary. It seems they were assessing different facets of intelligence, and this is of crucial importance in understanding the role of cognition in school leadership.

Gardner (1993) has written of 'multiple intelligences', deploring the unidimensional view of intelligence captured in IQ tests, which are only an indifferent predictor of performance in a profession after formal schooling (p. 14). Jaques argues for a natural hierarchy of cognitive capacity levels, based on an inter-relationship between types of information processing, task complexity and information complexity. Hierarchical leadership depends very much on the leader possessing sufficient cognitive complexity to handle the complexity of the role. Without this, he or she will not have the confidence of subordinates, and even charisma will not make up for such deficiency (Jaques 1989).

The cognitive dimension is the semi-hidden mental processes and states that interact with external circumstances to shape management practice. They include personal traits, knowledge and beliefs, values and skills (Leithwood *et al.* 1992). Using Schön's (1983) definitions, Leithwood *et al.* (1992) describe management situations as 'high ground' or 'swamp'. They stress the importance of vision, technical knowledge and communication in the former, but the 'swamp' is far messier, with confusing problems. Here leaders need cognitive flexibility to control their own thought processes, to be willing to consider alternatives, to be open to others' views, not to be hostage to previous experience and to see problems as challenges. They also need to be able to respond to things as they arise according to long- and short-term goals, guided by core values and vision. In today's schools, the reality is more swamp-like (West-Burnham 1997) and indicates complex cognitive processes. Several of these were shown in Chapter 1 in the Cranfield model, which identified five cognitive skills. My own research with headteachers identified six cognitive areas of behaviour, and we will now look at these.

Cognitive behaviours

Problem solving and reflection

Speaking about a particular staffing problem being addressed, one secondary head was clear that such a problem may take a long time, and would have to be solved within a global structure:

> But I mean that solutions are as wide as imagination, aren't they? You know, if you're prepared to sit back off it and reflect, which I think is the most important quality of any teacher but particularly the head-teacher . . . [the problem] will be resolved, I would think, within 12–15 months, which may seem a long timescale but it actually has got to be resolved within the whole-school structure. . . . We play a long game . . . I've always played the long game. (Head G)

The statement reveals four things about the use of cognition in finding solutions to some problems. First, the importance of reflection, which would appear difficult to find time for in present-day circumstances, especially in a climate where strong and decisive leadership is valued. Second, this reflection might need a long time and a head can be seen to be indecisive if this happens. Third, such reflection must take into account all the variables in the situation (in this case, 'the whole school structure'), and indicates that the head must be a systems thinker (Senge 1990). Finally, imagination is a key ingredient. This runs somewhat counter to the espoused Western idea of analysis and reasoning to generate and evaluate alternatives for action. Rather it suggests the need for what Claxton calls 'slow thinking' (Claxton 1997).

Other problems are more clear cut, and most respondents recognised the need for more analytical processing and prioritising, 'making sure that you know the important things are put to the top of the pile' (Head D). Angela considered herself 'good at analysing, and . . . good at synthesising', making it easier for her to articulate ideas and direction by 'pulling people together and talking things through'. Clear analysis of the situation left her in a position to articulate forcibly what was required from the local authority:

> What I am interested in is getting from it what I need for this school, so if you clarify things and say, 'Right, well here we are, here's the action plan, here's the key issues that relate to you as an LEA, this is what I want' . . . and they just looked at me in amazement. (Angela)

Heads now have less support in some aspects of problem solving. As one inspector put it, they are now 'dealing with things where you used to be able to say "You'll have to talk to the authority". You can no longer rely on the authority to deal with your financial and personnel issues.' This means that heads need to know *where* to get knowledge to support them in dealing with difficult people or circumstances, and information search becomes an important skill.

Understanding role complexity

The role of leaders has become more complex as they deal with more variables. Many expressed the need for 'flexible leadership', for 'knowing when

to lead from the front, the middle and the back', for leadership which fits the people and the situation:

> You can't say 'I lead from the front', and when you hear that, that's when people are making desperate mistakes. Some people are very proud of it. They're aggressive, they're abrasive, and they say, 'I'll take anybody on, a parent, the press', so they plough on with that rigid style in despair. (Head F)

This head is not saying that leading from the front is wrong. It is only wrong when this becomes a rigid model, unable to be modified according to circumstances. At root, there is a false perception. They may be 'proud' of their style because they think it is respected, but the reference to abrasiveness also shows the importance of understanding the self and the projection of self. This uni-dimensionality has to be developed into a multi-dimensional ability, which requires a degree of cognitive complexity to perceive multiple perspectives, and cognitive flexibility to be able to shift focus.

Two heads wrestled with the paradoxes of their role. One understood himself clearly, but was unable to change his need for control. He knew that he interfered too much, and experienced great internal conflict because of it. Another had the opposite problem. Allowing people freedom was sometimes a concern to him. After a meeting with the school's Senco, he worried all the following evening that he was not being directive enough. The discussion was as if between equals. They had known each other for a long time, but he was concerned. Here he thinks out the ramifications:

> I felt a tension with the meeting although it was very friendly. It's sort of me looking over my shoulder. Should I be more directive, more up front? [She] seems to treat me as an equal, and here's a tension. You can sometimes see people coming in with both feet – very directive – and often regret it. Also some staff would prefer it – it's a lot easier. But there's more than one way to influence, which is a build-up of little things. I felt that there definitely was a sense of shared leadership there. (Peter)

There is no way of assessing objectively the questions he is asking here. The tension in the meeting was because of contradictory mental models he held of his role relationship with Senco. Whereas he knew her well and trusted her implicitly, suggesting it was right to talk person-to-person informally, there was also the suspicion that the role relationship would suffer, with unforeseen consequences, perhaps that she would start to take advantage. Here again is a reference to the directive head, who is characterised as being thoughtless, but who is at least clear. He also has the idea that some staff would prefer this. These would be staff who themselves were perhaps

uni-dimensional, liked to know where they stood, and were unable to adapt to differing styles of leadership, which they would regard as inconsistency. He is looking over his shoulder, then, with an eye to what other staff will think, and how they will react, if this role relationship falters. Finally, he resolves the issue in his own mind, accepts the need for multi-dimensionality in leadership, and recognises shared leadership as appropriate.

Several of the heads interviewed recounted periods of trying to resolve this double problem of understanding themselves, and of coming to terms with multiple roles. This was most crucial for new heads:

> The effect that it's had on me is really I felt stressed at home. But then I thought, 'Well, there are other ways around this and I have to find them.' So I've approached problems from a different angle, and I'm wondering whether perhaps I ought to be more confrontational, which I haven't been this year . . . I do wonder sometimes if the staff think that I haven't actually got, erm, an opinion. (Head E)

Leaders must understand themselves and their actions in the context of others; they need 'thinking time' to approach staff who have 'got very different personalities'.

Living with paradox and ambiguity

Resolving or living with paradox is a key ingredient of cognitively complex thinking, and of leadership:

> That is the nature of the job, in that there are groups who are interested in what's going on in schools and their wishes are different, and that's where the problems really lie. For example, where you've got competing groups all wanting you to move in different ways. . . . Governors are one, parents another, and staff another. (Head A)

This head's way of dealing with such ambiguity was by coming to his own decisions, and then following them, even though this would upset some people. He was 'not a great compromiser'. A head cannot, he says, be continually 'trying to hedge, fudge, trying to agree with everybody – it can't be done'. This would only create a problem for the future rather than taking a difficult decision now. He sees ambiguous or paradoxical situations, then, from a point of view of 'either/or', or adversarial thinking, and compromise that he does not like as the only alternative.

The head's multiple roles suggested above are often paradoxical and complex, as are those of most staff in any position of leadership, for example anyone who is a team leader under performance management systems. Another head, for example, suggesting that the new context had been partly

responsible for a more 'hard-edged' approach, saw living with paradox as different from compromise 'because I think you can be both things. You can be a friend and a mentor, because you can be that thing called a critical friend' (Head Q).

As opposed to Head A's adversarial thinking, this involves 'both–and' thinking. This is not easy, and 'you don't half have to learn some skills on judging it right, don't you, because if you get it wrong it can be pretty damn devastating' (Head Q).

A further need for cognitive complexity in the head's thinking relates to the potentially paradoxical needs of driving change and promoting stability at the same time. To have coherence in doing this depends on 'the ability to use your experience, your intuition and your judgement to actually make the decisions that move the school forward and hold it steady at the same time' (Inspector B). This implies possession of the cognitive complexity to produce a paradoxical blend of stability through systems and procedures and at the same time generate the instability that will produce change. In a similar way, a holistic view is needed if heads are not to lose their sense of direction amidst the enormous fragmentation and urgency of tasks.

Handling inter-relatedness

Leaders need to think in a wide and inter-related way about many issues, often unexpected. We saw earlier how a pupil exclusion can bring with it a whole train of further events. This implies the ability to think holistically, which was a recurring theme throughout the interviews, a subset of cognitive complexity. As one school leader said, 'My thinking has to be on a global level – you know. How is the school coping now? How is it managing? When I spend my time thinking about the job at home or here, that's where I am with it. I want to be sure that I look at the thing in a holistic way' (Head D). However, such thinking must be tempered by acknowledging the parts that make up the whole: the two must be considered simultaneously.

Early in her headship, Angela realised that 'having to have all the threads gathered into your hands' was essential and difficult, especially early in a headship. The absence of such a wide perspective, relating all the pieces to the whole, results in confusion.

Even the protection of a teacher can be seen as holistic thinking. Head A's great belief in giving teachers back-up led at times to a cognitive judgement being made with several variables in mind at once, so that backing the teacher was actually a strategic decision: 'The ultimate aim is to get the teacher off the hook. It might not sound to be the fair thing to do, but it's the realistic thing to do if you keep the bigger picture in mind and you want the school to do well' (Head A).

Protecting the teacher is seen as the most secure way of guarding the integrity of the whole school in the event of dispute, even if the teacher has

been at fault, since 'when they make a mistake they cannot be crucified for it'. Clearly, this support is intended to maintain staff morale, which strengthens purpose, and benefits the whole school, but value conflicts also result: 'That's the only thing I do in this job where I'm not entirely convinced that I'm doing the right thing. It's the way I do it, but I don't think I'd say to anybody, "This is what you should do"' (Head A).

The head, then, has to be aware of the whole, of the parts, and of their relationships: 'The more successful heads are able to see the whole picture rather than seeing bits all the time. So it's a paradox. While they've got to behave in bits, they need to sort of make sense of the whole' (Inspector G).

The inter-relatedness of factors means that heads need to be able to process a wide range of information simultaneously. One teacher said about his head, John, that 'He has everything in his mind and can shift gear from one subject to another without problem. He has an amazing memory' (Head of maths). The second deputy concurred: he was 'on the ball instantly', seeing all the ramifications of an issue or problem at once. To another senior teacher, this was the ability to think quickly 'on his feet'. During the observation period, two sixth form girls came to John's office unannounced and unexpected, with a request to hold a fashion parade. Without pause for reflection, John listed a string of organisational pre-conditions:

> I'll need a full plan. Start time, finish time, which staff will be present throughout the whole evening – no gaps, with a teacher starting it off, then disappearing. Who will it be open to? Years 10 and 11? Just the sixth form? Outsiders? Are you going to have tickets? Who will collect them? What facilities will you need? What music gear? What amplification? You see, it's not as simple as you think. Then I'll say yes or no. (John)

Even if John is drawing on experience here, it is a remarkable on-the-spot lucid assessment of all the variables concerned, especially when his thoughts had been occupied with many other different incidents through the day.

A key feature of such multiple processing is width of attention. According to staff, John knew 'what's going on right across the board' (Deputy head). This means he 'holds a lot of information' and 'has his finger on the button' (Faculty head), and could evaluate 'huge and diverse areas' (Maths teacher). Peter, another head, spent much of the time pursuing several agendas at the same time, at one point referring to 'juggling all these things in my head at once'. As suggested earlier, in most interactions, such as visiting a classroom, he had several agendas in mind at once.

Understanding people

It was clear from the case study observations that the majority of heads' time was spent interacting with people. An understanding of people would there-

fore seem to be a priority. Perceiving and understanding others' mindsets is crucial to good leadership (de Bono 1996). This extends to the meaning people place on things and the way they process information, which can create problems. One primary head trying to promote a new English programme in the school found that '[It was] a culture change in opening people's eyes to the wider ramifications of reading and writing within the new curriculum. It hasn't been easy . . . it's amazing how different words mean different things even to teachers' (Head C).

Detecting the way people are thinking is a key ingredient of negotiation:

> One of the things I've been talking to my chair of governors about is that he . . . is politically opposed to any notion of a deficit budget, but at the same time as chair in school he really values, appreciates, highlights in every governors' meeting, things like the discipline policy, the level of support for slow learners. . . . So the key thing for any of those is the staffing levels, and I say to him, 'Well, you might be politically opposed to any notion of overspend, but then I can't possibly guarantee you all those super things . . . because they absolutely depend on level of staffing.' (Head Q)

It was clear that understanding people and their mindsets was a key asset in management, though understanding this did not always guarantee that appropriate leadership actions would follow. In one instance, it appeared the leader understood people's thinking but simply disregarded it! This was possibly because acting on it is complex and time-consuming and his favoured directive approach was simpler.

'Dealing with people' figured differently in Peter's thinking. He considered that an understanding of the dynamics of an organisation was a fundamental foundation for practising leadership. In particular, it was 'gut instincts about how to deal with people, and social dynamics, and knowing who's who and what's what . . . understanding how people think and do things' (Peter). Here Peter's 'dealing with people' means developing an intuitive understanding of the shadow organisation, the informal relationships and power nexuses in the school, as well as deliberately seeking an understanding of people's mindsets. This shows in the way Peter respects others' mental models. He fully realises they construct their own reality through such models, which is why he would wait to set policies in motion – for example, a policy for monitoring staff lessons by senior management other than himself that was being resisted – until by communicating he can help them to make different meaning by modifying their mental models. To force the issue otherwise would be counter-productive. Peter worked hard to create contexts in which self-organisation could flourish, and making meaning was fundamental to this, but until they changed, he recognised and respected others' mental models.

He also noted that the leader's understanding of people needs to extend beyond his own relationships to those of middle managers and their staff. With middle managers 'you've not only got to know them, their personality and character and credibility, but then you've got to predict and know how the groups they're responsible for will react and work' (Peter). Political acumen and 'nous' are both needed.

Visionary ability and strategic thinking

The research suggests that for many heads unpredictability is a problem in both vision and strategic thinking. The speed of change means that what we see as the long term is becoming shorter (Obeng 1996), and clearly, many heads find anything more than one year a long time for this activity, and some profess difficulty:

> Strategic long term [plans] I just refuse to countenance because I don't know where I'll be in three years' time – certainly not here. Basically we have a one-year development plan and we'll say in finance, we won't be able to do this in future years, but it's no more direct than that. Heads who've got this down to a fine art with all these plans carefully laid out, I admire. I just simply cannot think in those ways. (Head C)

This head senses the problem, but has not analysed it. All he knows is that currently 'all the plans we were going to make for September are out of the window'. Unpredictability in the external environment, possibly coupled with the internal one, is driving this view, which has resulted in a mindset of 'wait and see'. He has, he says, enough to do now without trying to peer into a future that experience tells him cannot be predicted.

As we saw earlier, it has become apparent that much strategic thinking is non-linear, often depending on chance opportunities, rather than the linear process it is often represented as, especially through the recommended formats of school development planning. Many strategies are, in fact, emergent.

Creating a vision for some provides difficulty, is often not a very conscious or overt phenomenon, and remains unarticulated: 'Erm . . . I think I know where I want this school to be . . . I know what I want. I know what I want from the staff, the children, resources, governors and all those things. In my head, all those things are there' (Head D).

These problems may be seen as a lack of clarity about vision and strategy, confusing the latter with short-term planning (Davies and Ellison 1997), or a lack of perception to envisage the former. However, another explanation could be that they are too flexible and emergent to be detailed in the kind of way that policy statements would dictate. For example, Peter claimed to have 'many things in mind at once' as he constantly re-configured future,

unwritten scenarios in his mind as external events moved forwards, and constantly 'tested the waters' for his own next actions in relation to these. This kind of thinking is cognitively complex and intuitive, and does not lend itself easily to linear description on policy statements.

Summary

These six behaviours are summarised in Table 11.1, and identified as 'high ground' or 'swamp' activities as judged by the degree of clarity involved in them (Schön 1983). The key points involved are shown in column three, and an evaluation of the underlying skills in column four. This list is interesting in that the kind of rational analysis that has been stressed in headship (Jirasinghe and Lyons 1996; TTA 1998) is not the over-arching skill it is

Table 11.1 Cognitive behaviours and abilities

Cognitive behaviours	*High ground or swamp*	*Key points*	*Key skills*
Problem solving	Swamp	Reflection time Settling into a solution Perception leading to action	Perception Cognitive complexity Reflection
Finding information and gaining clarity	High ground	Finding information Networking Analysing Prioritising	Information search Rational analysis
Understanding role complexity	Both	Multiple roles Mental models Paradox Cognitive flexibility Inter-relationship	Perception Cognitive complexity
Ambiguity, paradox and unpredictability	Swamp	Complexity	Cognitive complexity Reflection
Perceiving inter-relatedness	Swamp	Multi-tasking Holistic thinking Relating parts and whole Wide attention	Perception Cognitive complexity
Understanding people	Swamp	Logic bubbles Mindsets Political acumen Nous	Perception Cognitive complexity Reflection
Visioning and strategic thinking	Both	Shaping opportunism	Cognitive complexity Cognitive flexibility Rational analysis Visionary ability

assumed to be. Whilst still important in high-ground activities, it can be seen that 'swamp' activities probably outweigh these, and it is here that other cognitive abilities and processes are needed. Thus seven cognitive skills that contribute to heads' cognitive behaviour are identified: rational analysis, reflection, information search, perception, cognitive complexity, cognitive flexibility and longer-term visionary ability, and are similar to those quoted in Chapter 1 (Butcher *et al.* 1997).

Discussion

The analysis suggests a wide range of cognitive skills needed for leading and managing schools. It seems clear that intelligence is important, but the nature of that intelligence is less clear. The conventional approach to explaining intelligence is through a general intelligence quality that is composed of aspects such as visual and auditory perception, fluid and crystallised intelligence, general memory and others (Carroll 1993). There are, though, still difficulties in understanding wisdom and creativity, but there does seem to be some connection between these and general intelligence. In fact, Schmidt and Hunter (1998) showed through meta-analysis of several thousand research studies that psychometric tests were among the best predictors of performance at work when hiring people, and that the more mentally complex the job, the better the prediction. However, it is clear that our understanding of how people process complex information is a priority, and that rational analysis is frequently insufficient. It is also important to understand how presuppositions within our mental models of the world affect that processing.

Mental models

The way we frame events has a big influence on how we process information. A range of theories suggest that perception is based on schemas, cognitive maps and paradigms which contain scripts for dealing with particular events, or allow the processing of incomplete or ambiguous information (Bolman and Deal 1993). Such general framing was seen in the case studies, where both John and Angela framed events predominantly through a structural frame (Bolman and Deal 1993), viewing them in their relationship to school improvement, applying rational perspectives in a task orientation. Peter on the other hand tended to frame his thinking more around people and the dynamic interactions between them.

Framing may also be through metaphors (Morgan 1997) or fundamental mindscapes, where different participants employ different patterns of logic. Maruyama (1994) claims that in the West, the dominant mindscape is the 'H-type', which is rooted in logic, whilst at the other end of the spectrum is the 'G-type' mindscape, which is more intuitive. The dominant mind-

scape in English schools appears to be the 'H-type', logic-dominated variety. West-Burnham argues that concepts of hierarchy, control and linearity cause schools to resemble 'bureaucracies which, by definition, lack flexibility, adaptability and the potential to be transformed' (West-Burnham 1997: 232).

As we have seen, many heads show capacities for diverse thinking located towards the G-type mindscape. They are intuitively aware of the inter-relatedness of events and the need to keep many variables in balance as they co-vary, described by one as 'juggling'. Peter and John tended towards the G-type and H-type respectively, the former continually aware of the dynamic interactions in progress, the latter expecting linear control of events.

However, what Maruyama shows us is that even if H-type is the dominant espoused culture, there will be many teachers and administrators in our schools who internally subscribe to different mindscapes. If management simply disregards these alternative ways of thinking, they remain hidden, and the possessors compensate in several possible ways for the pressure from the dominant type.

There are three conclusions about mental models I would like to draw:

1 Since heads have such positional influence, it is crucial they reflect on and understand their own mental models and frames. This means continually testing the assumptions they are relying on.
2 Since diversity of thinking is important for the school's creativity, all staff need to become aware of, and respect, others' mindsets and frames. This can be difficult, since pressures to conform may mean they are concealed.
3 Complexity theory itself provides a very useful way of framing events.

Cognitive flexibility and complexity

The analysis in this chapter shows these skills to be particularly important in school leadership, where complex and often conflicting data has to be processed in the mind. Cognitive flexibility requires shifting perspective, remaining open-minded and considering possibilities (Butcher *et al.* 1997). Experienced heads and inspectors agreed that a key skill was to be able to hold in mind both the overview of the organisation, with a wide attention span, and the detail of it at the same time. This represents an aspect of cognitive complexity, the blending of two areas 'which often do not go together'. It is 'the ability to take multiple and integrated perspectives' and 'recognise and hold conflicting concepts in mind' and is seen as an essential ability for reading the environment, understanding one's own impact on others, managing complex roles and relationships, seeing things from others' points of view and managing diverse information flows (Butcher *et al.* 1997).

Both Peter and John showed such abilities. One faculty head had been impressed with John's ability to differentiate information when a colleague who was having difficulties had been to see him. The colleague returned, 'and I remember him coming to talk to me after he'd been to see John, erm, and he was amazed how he'd actually been talking to John, just talking, heart pouring out, and at the end of it, John could say, "You said this, but you said that, however", and he'd got about five things, out of all this drivel, that he'd picked out' (Faculty head). Others related the way he seemed to balance all the variables well and his ability to bring all the strands together. Many incidents showed John differentiating all the variables and their importance, and many of his actions were opportunistic, implying an ability to 'hold all things in his mind at once', and to fit them into a moving pattern.

The complexity theory concept of 'phase (or state) space' (Cohen and Stewart 1995) may be useful in understanding this ability. State space is a mathematical, multi-dimensional space where an enormous number of variables can all be tracked simultaneously and shown as one point to show the system's configuration and its trajectory. It is possible that heads who possess great cognitive complexity can relate the multiple dimensions on which the school could be monitored, supplementing formal monitoring, and intuitively reducing them to one point in organisational state space, perceiving the trajectory and nudging it in the desired direction by intervening at points of high leverage. It is certainly the case that several heads in the study felt they had a deep knowledge of how the school was moving and how different aspects were performing: that is, they readily differentiated and integrated, seeing the parts and the whole together. It is as though they have a sense in their mind of where all the parts of the school are moving in relation to each other. This is a skill of processing complex information that has all the appearance of intuition, and this may give us some insight into how cognitive complexity operates.

Using intuition

Some areas of cognition in which school leaders are involved are too complex and fluid for perception to be based clearly on known patterns or frames. The world of the head is rich in paradox and ambiguity, with many interrelationships to take into account, the complexity of people, singly and in groups, and the need to track and act upon many inter-related forces to produce coherence.

This information can be so complex and intertwined that rational analysis is no longer sufficient to process it, and some reliance on intuition may be necessary. Guy Claxton and his colleagues have recently brought intuition back into focus (Atkinson and Claxton 2000) and show quite convincingly that it is central to creativity and judgement. It is a non-intellectual way of

knowing that goes beyond technical-rational approaches (Glatter 1999) and relies heavily on non-conscious processes. Indeed, Nørretranders (1998) points out that the bandwidth of consciousness is only about 16 bits per second, and that more information is actually processed non-consciously.

Claxton says that intuition is often used for judgements, especially where much of the data is holistic, and that to force 'rational' judgement can be counter-productive. In creative processes, unconscious mental processes create something 'out of the blue' with little conscious understanding of where it came from. Insights or ideas like this can come suddenly and immediately, or may rely on a holistic perception of relationships between various elements that take place slowly, and unconsciously until the right answer suddenly 'pops up'. This is what happens often when we sleep on a problem.

Such a view is supported by the work of Ohmae (1982). Analysing Japanese management, he found strategists of 'great natural talent' who had an intuitive grasp, a mode of thinking where 'company, customers and competition merge in a dynamic interaction out of which a comprehensive set of objectives and plans for action eventually crystallizes' (Ohmae 1982: 2). He claims that insight is key to this process, fuelling a thought process that is basically creative and intuitive, beyond the reach of conscious analysis, and dependent on non-linear brain power (Ohmae 1982).

Parikh *et al.* (1994) found extensive use of intuition amongst managers. These ideas of a neural net settling into a solution, slow thinking, and self-organisation in the mind may lead to a possible new way of considering intuition. Rather than being 'analyses frozen into habit' (Simon 1987), which Mintzberg (1989) could not see leading to 'leaps' to creative solutions, it may represent self-organisation in the mind, which may or may not involve recognition of patterns acquired through experience. Much of heads' perception was intuitive. Head A was almost apologetic in admitting to the use of intuition in his thinking. He suggested that a researcher might find it difficult to comprehend, but 'some of it is almost a result of a gut reaction, and with the best will in the world, you couldn't explain that to somebody'. It leaves the possibility open that at least some of his accounts of the way he thinks were rationalisations for the sake of the researcher, or his own theory of what he does, rather than the theory in use. In any case, he talked at some length about the use of intuition:

> All I can say is that if you were me you could understand why I was doing it, but there's something inside which says the right thing to do is this, and in that sense that particular action isn't analysable. You've certainly drawn on past experience, but you've also drawn on what you are, what your character is, what your personality is, and it's fantastically complex. How do you explain to somebody why I decided to do that? In that particular situation something decided the best way is to do that. (Head A)

Intuition plays a big part, too, in staff selection, and is used throughout the job. However, he did not feel he would make a decision simply on the basis of intuition. But if, after analysis, a clear answer did not become apparent, then he would take a few days to come to a decision. This suggests an approach which uses analysis in the first place, but then allows 'slow thinking' to take over, the mind self-organising into a response and letting the answer come through a relaxation strategy (Boisot 1995).

In complex human inter-relationships, heads need patience and the ability not to rush into a situation. Some decisions need the time associated with slow thinking:

> There's patience and there's interpretation. Why are people saying this, why are they behaving like this, rather than the impulsive response . . . therefore sitting down and thinking 'what am I going to do with this?' is something that one really needs to do, but is not encouraged to do because your very job is about making decisions. People often make hundreds of decisions very quickly, and it's knowing which one to make slowly. (Inspector L)

At Beldene, staff attested to John's ability to see all the sides of an issue at once, whilst Peter demonstrated a similar ability to perceive several variables and their inter-relationships at the same time. According to de Bono (1996), this aspect of perception is wisdom, which takes the 'helicopter view' so that everything can be seen in perspective and in relation to everything else. It is wide-angle, parallel thinking, where different views, values and possibilities are considered in parallel, avoiding instant judgements based on either/or thinking. Intuition, though, can be fallible. Where it does serve us well, according to Claxton, is when we use intuitive realisations as hypotheses that we can question and to which we can then apply other ways of understanding.

Except for sudden insights, then, complex information processing relies on 'slow thinking' (Claxton 1997) where a large database of experience gradually 'settles' into a solution. It also needs a supportive context. Claxton's definition of such a context has great implications for the creative school. He says that intuition needs a co-operative, non-judgemental, purposeful and playful environment, with minimum defensiveness, pressure or stress.

The intuitive processes being described here can be seen as self-organising processes in the mind. The problem or idea produces an edge of chaos state that finally resolves itself unconsciously through self-organisation – it settles into a solution. The lesson for school leaders is to value your intuition, and to be patient in waiting for insights, but to use them as a working hypothesis and use other styles of thinking to check them out.

Conclusion

In this chapter I have tried to show, with some brief examples, the range of thinking ability required by school leaders. Some of those abilities, such as wide thinking and cognitively complex thinking, point to some of the issues about wisdom which we looked at in Chapter 1, and are crucial skills for making good judgements in complex circumstances. Perhaps it is a tenuous link, but since intuition can actually allow us to process more information subliminally, it is probably a very useful way of adding to our capacity to think wide and to allow all aspects of a problem or situation to self-organise into a solution. Intuition should therefore be regarded as an important attribute and a part of the total cognitive range of the school leader.

This range of thinking, then, is a very necessary competence for school leaders if they are to handle effectively the complexity that exists in their work. It has been a central theme of this book that schools are unique, and that effective leadership and managerial actions depend crucially on understanding, perception and awareness. Using complexity theory as a way to frame thinking has a powerful use in this respect, and has a direct bearing on understanding how to promote creativity in the school. Given more freedom, schools will be able to self-organise, co-evolve with each other and their environment, and usher in a new era of evolutionary school improvement.

Key points

1 Cognitive abilities 'beyond IQ' are important in school leadership.
2 A wide range of cognitive abilities is needed, to handle different and demanding areas, such as problem-solving, finding information, understanding complex roles, working in the midst of ambiguity, paradox and unpredictability, seeing the inter-relatedness of things, understanding people and strategic thinking.
3 The cognitive abilities needed are perception, cognitive complexity and flexibility, visionary ability, reflection, information search and rational analysis.
4 The way we frame information has a big impact on how we understand it. Complexity theory is proposed as a useful frame for understanding school leadership.
5 Cognitive complexity and flexibility are key skills for leaders.
6 Intuition can provide useful hypotheses, and slow thinking can be important.

Further reading

Morgan's *Images of Organization* (1997) is an excellent and interesting look at the way organisations can be looked at through different lenses, or metaphors.

Claxton's *Hare Brain, Tortoise Mind* (1997) elaborates on intuition and 'slow thinking'. (The sub-title *Why intelligence increases when you think less* gives a good clue to the contents!) and Atkinson and Claxton's *The Intuitive Practitioner* looks at the need for using intuition in education. Both are very readable.

Appendix

A note on the research

Most of the examples in the text, and the majority of Chapter 4, are taken from my own PhD research (Raynor 2000). This sought to answer the following main research questions:

1 What is the nature of leadership in the current context?
2 What processes, variables and conditions affect the practice of headship?
3 How do heads pursue strategic agendas?
4 What are the implications for headteacher development?

These four main questions gave rise to many sub-questions.

The strategy involved the use of survey and case studies: the survey to gain information across a range of respondents, the case studies to gain 'rich' information from a few respondents. The research took place in three phases, using a mixture of quantitative and qualitative methods.

The first stage was a questionnaire designed to identify heads' perceptions of their training needs, which would also indicate areas of their work they found challenging. It contained 56 items relating to training needs and 17 relating to training opportunities. This was sent proportionately to heads in three school sectors (primary, middle and secondary) and there were 171 responses – a somewhat surprising 45 per cent return.

The second stage built on this through in-depth semi-structured interviews with a sample of ten headteachers and four local authority inspectors. Interviews, lasting in the region of 1½ to 3 hours, were recorded, transcribed, coded and analysed.

The final stage, to ground the research more contextually, involved case studies in two schools deemed by the local education authority to be effective and one school in special measures. For the first two schools, the study was conducted over two weeks, shadowing the head and using multiple interviews in the first week, and interviewing staff during the second. Again, all interviews were recorded and analysed as above. The third case study, for operational reasons, was less elaborate, and relied on in-depth interviews with the head at different times over a nine-month period. Aspects of these

case studies are used in Chapter 4. The case studies, of course, gave the opportunity to observe heads' actions and question them about them, as well as a long, semi-structured initial interview. Observation data were analysed in units of observation or incidents, along with thoughts, feelings and explanations given by the head at the time.

Bibliography

Argyris, C. and Schön, D. (1978) *Organizational Learning: A theory of action perspective*, Addison-Wesley, Reading, MA.

Atkinson, T. (2000) *Learning to Teach: Intuitive skills and reasoned objectivity*, Open University Press, Buckingham

Atkinson, T. and Claxton, G. (2000) *The Intuitive Practitioner*, Open University Press, Buckingham.

Bak, P. and Chen, K. (1991) Self-organized criticality, *Scientific American*, **January**, 26–33.

Bayliss, V. (1999) *Opening Minds: Education for the 21st century*, RSA, London.

Beer, S. (1979) *The Heart of the Enterprise*, Wiley, Chichester.

Bell, L. (2002) Strategic planning and school management: full of sound and fury, signifying nothing, *Journal of Educational Administration*, **40** (5), 407–424.

Bennis, W., Parikh, J. and Lessem, R. (1994) *Beyond Leadership: Balancing economics, ethics and ecology*, Blackwell, Oxford.

Berne, E. (1964) *Games People Play*, Grove Press, New York.

Birren, J. E. and Fisher, L. M. (1990) The elements of wisdom: overview and integration, in *Wisdom: Its nature, origins and development*, (ed.) R. J. Sternberg, pp. 317–332, Cambridge University Press, New York.

Blake, R. and Mouton, J. (1964) *The Managerial Grid*, Gulf Publishing, Houston, Texas.

Bohm, D., Factor, D. and Garrett, P. (1991) *Dialogue – a Proposal*, http://ratical.org/many_worlds/K/dialogueProposal.html (accessed 6 June 2003).

Boisot, M. H. (1995) *Information Space*, Routledge, London.

Bolman, L. and Deal, T. E. (1993) Everyday epistemology in school leadership: patterns and prospects, in *Cognitive Perspectives on Educational Leadership*, (eds) P. Hallinger, K. Leithwood and J. Murphy, pp. 21–33, Teachers College Press, New York.

Buckingham, M. and Coffman, C. (1999) *First, Break All the Rules: What the world's greatest managers do differently*, Simon and Schuster, London.

Bush, T. and Coleman, M. (2000) *Leadership and Strategic Management in Education*, Paul Chapman, London.

Butcher, D., Harvey, P. and Atkinson, S. (1997) *Developing Businesses through Developing Individuals*, Cranfield School of Management, Cranfield.

Capra, F. (1982) *The Turning Point*, Wildwood House, London.

Capra, F. (1996) *The Web of Life*, HarperCollins, London.

Capra, F. (2002) *The Hidden Connections: A science for sustainable living*, HarperCollins, London.
Carroll, J. B. (1993) *Human Cognitive Abilities: A survey of factor analytic studies*, Cambridge University Press, Cambridge.
Ceci, S. J. and Liker, J. K. (1986) A day at the races: a study of IQ, expertise and cognitive complexity, *Journal of Experimental Psychology*, **115,** 255–266.
Cilliers, P. (1998) *Complexity and Postmodernism*, Routledge, London.
Claxton, G. (1997) *Hare Brain, Tortoise Mind: Why intelligence increases when you think less*, Fourth Estate, London.
Claxton, G. (1999) *Wise Up: The challenge of lifelong learning*, Bloomsbury, New York.
Cohen, J. and Stewart, I. (1995) *The Collapse of Chaos: Discovering simplicity in a complex world*, Penguin, London.
Conner, D. R. (1998) *Leading at the Edge of Chaos: How to create the nimble organization*, Wiley, New York.
Csikszentmihalyi, M. and Rathunde, K. (1990) The psychology of wisdom: an evolutionary interpretation, in *Wisdom: Its nature, origins and development*, (ed.) R. Sternberg, pp. 25–51, Cambridge University Press, Cambridge.
Davies, B. and Ellison, L. (1997) *Educational Leadership for the 21st Century*, Routledge, London.
Day, C., Hall, C. and Whitaker, P. (1998) *Developing Leadership in Primary Schools*, Paul Chapman, London.
de Bono, E. (1994) *Parallel Thinking*, Viking, London.
de Bono, E. (1996) *Textbook of Wisdom*, Viking, London.
Deering, A., Dilts, R. and Russell, J. (2002) *Alpha Leadership: Tools for business leaders who want more from life*, Wiley, Chichester.
Department for Education and Employment (DfEE) (1996) *Setting Targets to Raise Standards: A survey of good practice*, OfSTED and Department for Education and Employment, London.
DfEE (1997) *From Targets to Action: Guidance to support effective target-setting in schools*, Department for Education and Employment, London.
Evans, P. A. L. (2000) The dualistic leader: thriving on paradox, in *Management 21C: Someday we'll all manage this way*, (ed.) S. Chowdhury, pp. 66–82, Financial Times/Prentice Hall, London.
Fidler, B. (2002) *Strategic Management for School Development*, Paul Chapman, London.
Flaherty, J. (1999) *Coaching: Evoking excellence in others*, Butterworth Heinemann, Oxford.
Fonseca, J. (2002) *Complexity and Innovation in Organizations*, Routledge, London.
Fullan, M. (1993) *Change forces: Probing the depths of educational reform*, Falmer Press, London.
Fullan, M. (1999) *Change forces: The sequel*, Falmer Press, Bristol, PA.
Fullan, M. (2001) *Leading in a Culture of Change*, Jossey-Bass, San Francisco.
Fullan, M. (2003) Change forces with a vengeance, RoutledgeFalmer, London.
Gardner, H. (1993) *Multiple Intelligences: The theory in practice*, Basic Books, New York.
Gardner, H. (1995) *Leading Minds: An anatomy of leadership*, Basic Books, New York.
Gharajedaghi, J. (1999) *Systems Thinking: Managing chaos and complexity – a platform for designing business architecture*, Butterworth Heinemann, Boston.

Gibb, C. A. (1954) Leadership, in *Handbook of Social Psychology*, (ed.) G. Lindzey, **2**, pp. 877–917, Addison-Wesley, Reading, MA.
Giddens, A. (1979) *Central Problems in Social Theory*, Macmillan, London.
Glatter, R. (1997) Context and capability in educational management, *Educational Management and Administration BEMAS*, **25** (2), 181–192.
Glatter, R. (1999) From struggling to juggling: towards a redefinition of the field of educational leadership and management, *Educational Management and Administration*, **27** (3), 253–266.
Gödel, K. (1992) (trans. Meltzer, B.) *On Formally Undecidable Propositions of* Principia Mathematica *and Related Systems*, Dover Publications, Mineola, NY.
Goleman, D. (1996) *Emotional Intelligence*, Bloomsbury, London.
Goleman, D. (1998) *Working with Emotional Intelligence*, Bloomsbury, London.
Goleman, D., Boyatzis, R. and McKee, A. (2002) *The New Leaders: Transforming the art of leadership into the science of results*, Little, Brown, London.
Graham, A. C. (1981) *Chuang Tzu: The inner chapters*, Allen and Unwin, London.
Gronn, P. (2000) Distributed properties: a new architecture of leadership, *Educational Management and Administration*, **28** (3), 317–338.
Hall, L. M. (1999) *Setting Empowering Frames for 'Trust' and Trustworthiness*, http://www.neurosemantics.com/Articles/Trust.htm (accessed 25 March 2003).
Hall, L. M. (2001) *Frame Games*, Neuro-Semantic Publications, Grand Junction, CO.
Hampden-Turner, C. (1990) *Charting the Corporate Mind*, Free Press, New York.
Handy, C. (1993) *Understanding Organisations*, 4th ed, Penguin, London.
Hargreaves, D. (1998) *Creative Professionalism: The role of teachers in the knowledge society*, Demos, London.
Hargreaves, D. H. and Hopkins, D. (1991) *The Empowered School*, Cassell, London.
Harris, A. (2002) *Effective Leadership of Schools in Difficulty*, http://www.icponline.org/feature_articles/f7_02.htm (accessed 6 April 2003).
Harris, A. and Lambert, L. (2003) *Building Leadership Capacity for School Improvement*, Open University Press, Maidenhead.
Hersey, P. and Blanchard, K. (1982) *The Management of Organizational Behaviour: Utilizing human resources*, Prentice Hall, Englewood Cliffs, NJ.
Hill, L. A. (2000) Leadership as collective genius, in *Management 21C: Someday we'll all manage this way*, (ed.) S. Chowdhury, pp. 45–65, Financial Times/Prentice Hall, London.
Jaques, E. (1989) *Requisite Organization*, Cason Hall, Arlington, VA.
Jaques, E. and Clement, S. D. (1991) *Executive Leadership*, Cason Hall, Arlington, VA.
Jenkins, E. (1999) Report at the Association for Science Education Conference, Florida.
Jervis, P. (1998) *Leading the Continuously Creative Enterprise*, RSA, London.
Jirasinghe, D. and Lyons, G. (1996) *The Competent Head*, Falmer, London.
John, P. (2000) Awareness and intuition: how student teachers read their own lessons, in *The Intuitive Practitioner*, (ed.) T. Atkinson and G. Claxton, Open University Press, Buckingham.
Johnson, G. and Scholes, K. (1999) *Exploring Corporate Strategy: Text and cases*, 5th ed, Pearson Education, Harlow.
Kaipa, P. and Volckmann, R. (1999) *An Application of Bohmian Dialogue in Organizations*, http://www.mithya.com/learning/dialoguecase.html (accessed 5 April 2003).

Kaplan, D. and Glass, L. (1995) *Understanding Nonlinear Dynamics*, Springer, New York.
Katz, D. and Kahn, R. L. (1978) *The Social Psychology of Organizations*, 2nd ed, Wiley, New York.
Katzenbach, J. R. and Smith, D. K. (1993) *The Wisdom of Teams: Creating the high-performance organization*, Harvard Business School Press, Boston, MA.
Kelly, K. (1994) *Out of Control: The new biology of machines*, Fourth Estate, London.
Kelly, S. and Allison, M. A. (1999) *The Complexity Advantage: How the science of complexity can help your business achieve peak performance*, McGraw-Hill, New York.
Kimber, M. (2003) *Does Size Matter? Distributed leadership in small secondary schools*, National College for School Leadership, Nottingham.
Knight, S. (2002) *NLP at Work: The difference that makes the difference in business*, 2nd ed, Nicholas Brealey, London.
Kosko, B. (1993) *Fuzzy Thinking: The new science of fuzzy logic*, HarperCollins, London.
Kuhn, T. S. (1962) *The Structure of Scientific Revolutions*, University of Chicago Press, Chicago.
Landsberg, M. (1997) *The Tao of Coaching*, HarperCollins, London.
Leithwood, K. L., Begley, P. T. and Cousins, J. B. (1992) *Developing Expert Leadership for Future Schools*, Falmer, London.
Lewin, R. (1992) *Complexity: Life on the edge of chaos*, Macmillan, New York.
Lewin, R. and Regine, B. (1999) *The Soul at Work: Unleashing the power of complexity science for business success*, Orion, London.
Lissack, M. and Roos, J. (1999) *The Next Common Sense: Mastering corporate complexity through coherence*, Nicholas Brealey, London.
McDermott, R. (1999) Learning across teams: the role of communities of practice in team organizations, *Knowledge Management Review*, **8**, 32–36.
McKelvey, B. (1999) The gurus speak: complexity and organizations, *Emergence*, **1** (1), 73–91.
Mapes, J. (2001) *Quantum Leap Thinking: An owner's guide to the mind*, London: Souvenir Press.
Marshall, I. and Zohar, D. (1997) *Who's Afraid of Schrödinger's Cat?* Bloomsbury, London.
Maruyama, M. (1994) *Mindscapes in Management*, Dartmouth, Aldershot.
Mead, G. H. (1934) *Mind, Self and Society*, University of Chicago Press, Chicago.
Merlevede, P. E., Bridoux, D. and Vandamme, R. (2001) *7 Steps to Emotional Intelligence*, Crown House, Carmarthen.
Mintzberg, H. (1989) *Mintzberg on Management: Inside our strange world of organisations*, Free Press, London.
Mintzberg, H. (1996) Strategic thinking as seeing in *Developing Strategic Thought*, (ed.) B. Garratt, pp. 79–83, HarperCollins, London.
Molden, D. (2001) *NLP Business Masterclass: Skills for realizing human potential*, FT Prentice Hall, London.
Morgan, G. (1997) *Images of Organization*, 2nd ed, Sage, London.
Morrison, K. (2002) *School Leadership and Complexity Theory*, RoutledgeFalmer, London.
Nelson-Jones, R. (1996a) *Effective Thinking Skills*, Cassell, London.
Nelson-Jones, R. (1996b) *Relating Skills*, Cassell, London.

Nias, J., Southworth, G. and Yeomans, R. (1989) *Staff Relationships in the Primary School*, Cassell, London.
Nørretranders, T. (1998) *The User Illusion: Cutting consciousness down to size*, Penguin, London.
Obeng, E. (1996) *Putting Strategy to Work*, Pitman, London.
Ofman, D. (2001) *Core Qualities*, Scriptum, Schiedam, Netherlands.
OfSTED (1998) *School Evaluation Matters*, OfSTED, London.
Ohmae, K. (1982) *The Mind of the Strategist*, McGraw-Hill, New York.
Parikh, J., Neubauer, F. and Lank, A. G. (1994) *Intuition: The new frontier of management*, Blackwell, Oxford.
Pascale, R. T., Millemann, M. and Gioja, L. (2000) *Surfing the Edge of Chaos*, Three Rivers Press, New York.
Prigogine, I. and Stengers, I. (1984) *Order out of Chaos*, Heinemann, London.
Raynor, A. (2000) A Study of Complexity, Cognition and Competence in Headship, unpublished PhD dissertation, University of Huddersfield, England.
Raynor, A. (2002) Complexity, creativity and personal development in headship, in *Professional Development and Institutional Needs*, (eds) G. Trorey and C. Cullingford, Ashgate, Aldershot.
Reddin, B. (1989) *The Output Oriented Manager*, Gower, Aldershot.
Reid, I., Thornton, M. and Bricheno, P. (1999) The Apple Project, Paper presented at the BERA conference.
Reina, D. and Reina, M. (1999) *Trust and Betrayal in the Workplace: Building effective relationships in your organization*, Berritt-Koelher, San Francisco.
Richardson, K. (1999) *The Making of Intelligence*, Weidenfeld and Nicolson, London.
Rose, S. (1998) *Lifelines: Biology, freedom, determinism*, Penguin Books, London.
RSA (2002) *Opening Minds: Project update*, RSA, London.
Schein, E. H. (1985) *Organisational Culture and Leadership*, Jossey-Bass, San Francisco.
Schmidt, F. L. and Hunter, J. E. (1998) The validity and utility of selection methods in personnel psychology: practical and theoretical implications of 85 years of research findings, *Psychological Bulletin*, **124,** 262–274.
Schön, D. A. (1983) *The Reflective Practitioner*, Basic Books, New York.
Senge, P. (1990) *The Fifth Discipline: The art and practice of the learning organization*, Doubleday, New York.
Senge, P., Cambron-McCabe, N., Lucas, T., Smith, B., Dutton, J. and Kleine, A. (2000) *Schools that Learn*, Nicholas Brealey, London.
Sergiovanni, T. J. (1996) *Leadership for the Schoolhouse*, Jossey-Bass, San Francisco.
Simon, H. A. (1987) Making management decisions: the role of intuition and emotion, *Academy of Management Executive*, **February**, 61–63.
Simonton, D. K. (1988) Creativity, leadership and chance, in *The Nature of Creativity: Contemporary psychological perspectives*, (ed.) R. J. Sternberg, pp. 386–426, Cambridge University Press, Cambridge.
Southworth, G. W. (1995) *Looking into Primary Headship: A research based interpretation*, Falmer Press, London.
Southworth, G. W. (1999) Primary school leadership in England: policy, practice and theory, *School Leadership and Management*, **19** (1), 49–65.
Spillane, J., Halverson, R. and Diamond, J. (1999) Towards a Theory of Leadership Practice: A distributed perspective, Institute for Policy Research Working Paper, WP-99-3, Northwestern University, Evanston, IL.

Stacey, R. D. (1996) *Strategic Management and Organisational Dynamics*, 2nd ed, Pitman, London.
Stacey, R. D. (2000) *Strategic Management and Organisational Dynamics*, 3rd ed, Pearson Education, Harlow.
Stacey, R. D. (2001) *Complex Responsive Processes in Organisations*, Routledge, London.
Stacey, R. D., Griffin, D. and Shaw, P. (2000) *Complexity and Management: Fad or radical challenge to systems thinking?* Routledge, London.
Starr, J. (2003) *The Coaching Manual: The definitive guide to the process, principles and skills of personal coaching*, Prentice Hall Business, London.
Sternberg, R. J. (1988) A three-facet model of creativity, in *The Nature of Creativity: Contemporary psychological perspectives*, (ed.) R. J. Sternberg, pp. 125–147, Cambridge University Press, Cambridge.
Sternberg, R. (ed.) (1990) *Wisdom: its nature, origins and development*, Cambridge: Cambrige University Press.
Sternberg, R. J. (1990) *Wisdom and its Relations to Intelligence and Creativity*, Cambridge University Press, New York.
Stewart, I. (1989) *Does God Play Dice?* Blackwell, Oxford.
Streatfield, P. J. (2001) *The Paradox of Control in Organizations*, Routledge, London.
Swieringa, J. and Wierdsma, A. (1992) *Becoming a Learning Organization: Beyond the learning curve*, Addison-Wesley, Wokingham.
Tardif, T. Z. and Sternberg, R. J. (1988) What do we know about creativity? in *The Nature of Creativity: Contemporary psychological perspectives*, (ed.) R. J. Sternberg, pp. 429–440, Cambridge University Press, Cambridge.
Teacher Training Agency (TTA) (1998) *National Standards for Headteachers*, TTA, London.
Tye, B. (2000) *Hard Truths: Uncovering the deep structure of schooling*, Teachers College Press, New York.
Wenger, E. (1998) *Communities of Practice: Learning, meaning and identity*, Cambridge University Press, Cambridge.
West-Burnham, J. (1997) Leadership for learning: reengineering 'mindsets', *School Leadership and Management*, **17** (2), 231–244.
Wheatley, M. (1992) *Leadership and the New Science: Learning about organization from an orderly universe*, Berrett-Koehler, San Francisco.
Whitehead, A. N. and Russell, B. (1910) *Principia Mathematica*, vol. 1, Cambridge University Press, Cambridge.
Whitmore, J. (2002) *Coaching for Performance: Growing people, performance and purpose*, 3rd ed, Nicholas Brealey, London.
Wood, R. (2000) *Managing Complexity: How businesses can adapt and prosper in the connected economy*, Profile Books, London.
Zohar, D. and Marshall, I. (1994) *The Quantum Society: Mind, physics and a new social vision*, Flamingo, London.

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