

Chapter 4 – Metaphor

4.1 Introduction

I began this study wishing to find parallels between human systems such as business organizations, and biological systems. In this thesis I am developing a line of thought that uses communicative processes seen in natural systems to suggest a model for human communicative systems, and indeed for communication in general. The essence of what I was trying to do at the outset however remains the same; I was taking knowledge from one domain and applying it in another. I was creating a new *metaphor* for understanding communication.

So, since I have been working with a metaphor, it would be useful to look more closely at how metaphorical thinking affects our perception of an issue, and how these metaphors may come into being. I shall begin with a look at how the contemporary theories of metaphor have developed, with an introduction to and critical discussion of the nature of metaphor as investigated by researchers in linguistics, psychology and organization science. I shall move on to discuss how metaphor can “frame” our thoughts and affect the way that we act and react in the real world. Finally I shall illustrate in detail how different metaphors may alter our perception of a system, using two distinct metaphorical paradigms – the mechanical metaphor, and the organic metaphor.

4.2 Theories of metaphor

4.2.1 Linguistic theories of metaphor

“Metaphor: a figure of speech in which a name of descriptive word or phrase is transferred to an object or action different from, but analogous to, that which it is literally applicable.”

Oxford English Dictionary

The study of metaphor is by no means a new subject. Aristotle wrote of the capacity of metaphor to bring “clarity and charm” to poetry and prose, and warned that the use of inappropriate metaphors may cause confusion. Until the field of linguistics really began to be developed in the early 1900s however, metaphor was mostly regarded as a poetic device, something that could be used to make language “pretty” (Blasko, 1999).

With the advent of linguistic and dialogical models of communication however, researchers began to consider metaphor in a new way, as a subject in its own right. Initially, metaphor was studied only from a linguistic point of view, so most of the early work on the topic concerns how metaphor is generated through language. Searle brought together this work in a review published in 1979. In this review, Searle argues that metaphor is primarily a linguistic phenomenon, processed by the brain as language, and that the processing of metaphorical or figurative language takes more time than the processing of literal language (Searle, 1979).

One of the issues that seems important to linguists who have studied metaphor is that of meaning. They focus on questions such as “What is the meaning of a metaphorical utterance?”, “Is the true meaning of a metaphorical statement the literal meaning of the words themselves? Or does the statement mean what the speaker wanted it to mean?”. Searle believes that metaphorical expressions mean what the *speaker intended* them to mean (Searle, 1979). This may seem like a trivial point, but it has had a significant influence on the way linguists study metaphor. As Searle points out in his review, unlike in a literal and other non-metaphorical expressions, the speaker’s meaning in a figurative or metaphorical expression is *not the same* as the literal meaning. How then does the hearer work out what the speaker’s meaning is? Searle identifies a sequence of three stages that a hearer goes through to interpret a metaphorical statement.

- i) Firstly the hearer has to recognise that the statement is figurative, rather than literal. He usually does this by working out that the literal meaning of the statement is not true. To use Searle's example, the statement "Sam is a pig", is easily proven untrue. But it isn't always that simple. Take Searle's next example, a quote from Disraeli who said, "I have climbed to the top of the greasy pole". How do we know that he didn't actually climb a greasy pole? Searle suggests that we know because of the *context* of the statement. When we listen to certain speakers, or know more about the context of the speaker, then we are on the lookout for metaphorical forms of speech. An example is when we read Romantic poetry, which is littered with metaphor. The reader, who is aware of this, knows to be on the lookout for figurative language.
- ii) Searle's second stage of metaphor interpretation involves the hearer finding a possible alternative meaning for a statement that he has deduced is figurative. This is done, says Searle, by the hearer going back to the metaphor (X) and working out what features X has that might be present in the subject (Y).
- iii) The third stage, is when the hearer goes through the possible features of X that he has deduced in stage ii, and works out which of them the speaker probably meant to apply to the subject, Y. This says Searle, is a complex process, affected by factors such as context, prior knowledge and shared knowledge, or common ground. But when it works, the metaphor is understood.

Searle explains that metaphors tend to *add more* meaning than a literal description. This he claimed, is because the interpretation of figurative language involves the hearer in a much more *participative* way than for literal language. To understand a figurative statement, the hearer has to process the statement according to the stages described above, whereas a literal statement can be understood in a much more passive manner. Searle argues that this is why metaphors often have more expressive impact than literal language, as the hearer is much more involved in the process of recognition and understanding of the context of the statement.

In contrast to Searle's step-by-step analysis of how metaphor is understood, Rohrer (1995) favours a parallel model of meaning making in figurative language. Rohrer rejects Searle's sequential model because he believes that it would take longer in real time than parallel processing. This, he says is supported by evidence from other researchers who have shown that, in most cases, comprehension of metaphorical language takes no longer than of literal language (Rohrer, 1995; Blasko, 1999). Rohrer favours a model where meaning-making in both figurative and literal language is one and the same process. He suggests that figurative meaning interpretation is probably not localised in one region of the brain, and this, he concludes, means that the model could only be substantiated after other kinds of investigation, such as neurological studies of what's happens in the brain during language interpretation.

Rumelhart (1979) is in agreement with Rohrer on the parallel nature of figurative language processing. He says that:

"The distinction between literal and metaphorical language is rarely, if ever, reflected in a qualitative change in the psychological processes involved in the processing of that language."

Rumelhart demonstrates this with a description of how children naturally shift between literal and figurative language. When a child can't find an exact word or phrase to express what they want to say, they often use an alternative figurative phrase instead; for example, the child who describes a "nasty smell in her tummy". The child uses a figurative term purely because their vocabulary does not yet contain sufficient words to express literally everything they want to say. But this also shows that the language processes involved in figurative speech are the same as for literal speech. A child doesn't stop and think "I'll use a metaphor because I don't know the right word", it's a natural process, and Rumelhart surmises that the process used by adults is exactly the same.

4.2.2 Cognitive theories of metaphor

In the early 1980s, George Lakoff and Mark Johnson published a radical new model of metaphor that challenged the established thinking on the subject (Lakoff and Johnson, 1980). They introduced the concept that metaphor might not only be concerned with language, but also about the way we *think*. Indeed they suggested that making metaphors is a *cognitive* process, and is something that the human brain does naturally. According to Lakoff and Johnson, our thoughts are *shaped* or *framed* by metaphor. Our brains work by relating new knowledge to old, and we are constantly looking at things *as if* they were something else. When we encounter something new, we ask ourselves “have I seen something like this before?” The model that Lakoff and Johnson proposed suggested that the whole way we understand and relate to the world is metaphorical, and that linguistic metaphor is just a surface reflection of the deep level of cross-domain linking that happens in our minds.

Lakoff and Johnson’s model then is as much to do with psychology, cognitive science and communication theory as with linguistics. In his (1992) article on “The Contemporary Theory of Metaphor”, Lakoff cites Michael Reddy, a linguist who specialized in communication theory as one of his primary influences. Reddy had written an article in 1979 titled “The Conduit Metaphor”. Reddy’s Conduit Metaphor asserts that communicators are “containers” and that communication acts as a conduit along which information is passed from one to the other. It is, suggests Reddy, based upon the principles of Information Theory and Cybernetics, which treats communication as a transfer of information between a source and a receiver. The conduit metaphor, says Reddy, has become part of common parlance in the form of some of the metaphors we use to describe communication, for example: “Getting an idea across”, “Getting through to someone” and so on. Reddy maintained that this view of communication theory has strongly influenced the way we think about and work with language itself; the conduit metaphor of communication is a *cognitive model*, but that this was rarely acknowledged by theorists at the time.

Lakoff points out that Reddy’s article was the first instance where someone showed that “the locus of metaphor is thought, not language” (Lakoff, 1992). Lakoff agreed with Reddy that conceptual models such as the conduit metaphor may have a profound effect on the way that we relate to the world, as well as on

how we construct our language. Lakoff, however, took this idea further, and proposed that there are actually *many* conceptual models upon which we build our understanding of the world, and that we use in our communication with others. Some of the other mappings or metaphors that Lakoff presented were: LOVE AS A JOURNEY (for example, “we’ve reached a dead end in our relationship”); TIME AS PASSING MOTION OVER A LANDSCAPE (for example “Christmas is not far off”); AFFECTION IS WARMTH (e.g. “she is a warm-hearted person”).

How did Lakoff reach this new model? He explains it thus: If metaphor were merely a case of semantics, then each metaphorical phrase would have different origins (Lakoff, 1992), and phrases such as “we’ve hit a dead end in our relationship”, or “look how far we’ve come, we can’t turn back now”, would each form a separate metaphorical mapping. These examples, however, clearly share a common conceptual origin – that of “love as a journey”. It was this realisation that prompted Lakoff to hypothesise that metaphorical phrases could actually be surface reflections of a deeper level of metaphorical mapping. Lakoff set out on a search for further examples to confirm this theory; and he found so many more mappings that he concluded that metaphor is not only about words, it reflects the way we *think*. We speak in metaphor because our minds work by transferring ideas from one conceptual domain to another: When we speak metaphorically it is because we think in metaphor.

It is not only obviously figurative language that reflects our metaphorical turn of thought. A great deal of our every day thinking is based on metaphorical mappings (Lakoff, 1992; Lakoff and Johnson, 1980). Indeed, Lakoff claims that *any* thought that is to do with abstractions or emotions is usually metaphorical. Following this argument, it might appear that pretty much everything we say, do or think is metaphorical. This is quite a disturbing concept! If everything is a metaphor of something else, where did we start? Is there nothing that is not a metaphor? Fortunately, logic dictates that not *everything* can be metaphor. Some things are experienced and conceptualised literally. Lakoff explains that non-metaphorical concepts are the ones that are based on physical experience (Lakoff, 1992). So, to quote his examples: “The balloon went up” is not metaphorical, neither is “the cat is on the mat”. They are direct observances, and there is no transfer between conceptual domains.

Lakoff's work caused a sea change in the field of metaphor research. Prior to the publication of the book titled "Metaphors we live by", which he co-authored with Mark Johnson in 1980, metaphor was studied primarily as a linguistic speciality. After the publication of Lakoff and Johnson's contemporary theory of metaphor, there was a change of focus away from linguistic study of metaphor and toward the notion that metaphorical thought is a cognitive process that pervades our everyday cognition (Blasko, 1999; Stern,2000).

The principle feature of Lakoff and Johnson's theory of metaphor is that it identifies metaphor as being a *transfer* between two conceptual domains, or subject areas: the source and the target. This has become known as the "two-domain mapping model" of metaphor. This model is widely acknowledged as being the first move away from exclusively linguistic studies of metaphor. However, in recent years the model has been adapted and expanded to reflect new thinking in the area.

4.2.3 The conceptual blending model

In 1995 Gilles Fauconnier and Mark Turner published a *multi domain* model of metaphor. Although they do not entirely reject Lakoff and Johnson's two-domain model, they do propose that it exists within a framework of a larger model. Fauconnier and Turner call theirs a "many space model" (Fauconnier and Turner, 1995). Unlike Lakoff's model of discrete conceptual domains, where metaphor is generated through transfer between different domains, the many space model proposes that metaphors are generated in non-specific "mental spaces". These mental spaces are areas of consciousness that hold existing ideas or representations of an object that may be real, imagined or otherwise constructed by a speaker. A single mental space can represent multiple conceptual domains. *Mappings* are created between the spaces to create new conceptualisations, including metaphors.

Fauconnier elaborated on the many domain model in his book titled "Mappings in thought and language" (Fauconnier, 1997). In this book, he again reiterated Lakoff's view that metaphor is deeper than language alone, and that our use of metaphor reflects the way our minds work.

According to Fauconnier, the process of metaphorical cognition can be described as a number of stages. The first stage concerns the *induction of analogy*. When we use a metaphor, for example, a “computer virus”, we apply a *schema* from one domain to another. So, for the concept of a computer virus we connect the framework that we already have about viruses, (including perhaps ideas that concern health, disease, the spread of a disease, something that can’t be treated easily), onto our mental domain that relates to computers. But the mapping, initially at least, only goes as far as making structural similarities, we do not necessarily make detailed and technical parallels between the two domains; we do not necessarily expect to treat computer viruses in exactly the same way as human viruses.

The second stage of metaphor creation concerns *categorization*, and the creation of a new conceptual structure. The mapped domain doesn’t actually determine how we think of the existing domain; it simply helps us to build new ways of thinking about it. Also, if reality prevents us from building this new domain, the metaphor may break down as it is proven that it “doesn’t work”. For a computer *virus* the metaphor does work quite well. Yet even in this example, the mapping mostly works at a high level; at a more detailed level the computer technicians rely on their own specific tools to deal with viruses.

The next stage in Fauconnier’s model of metaphor creation is that of *naming*. By transferring *names* of things from one domain to another, we are no longer talking about one thing “as if it were” another, rather we are actually saying it *is* the other thing. This means that the metaphorical mapping has (to use Fauconnier’s own words) “become entrenched in our conceptual and grammatical system”. This:

- a) makes the mapping less obvious at a conscious level, so that it becomes unconscious and more natural in use
- b) establishes the metaphor as a model for reasoning and new thinking about the target domain

The final stage is one of *conceptual blending*. Eventually the two categories become blended so that, for example in our computer virus example, virus means *both* a biological virus and a computer virus. They are both now seen as “the same kind of thing”.

At first, it may seem that Lakoff's Two Domain model and Fauconnier's Multi-space model are in conflict, since one proposes that there are distinct conceptual domains, and the other proposes shared conceptual "areas", Grady *et al* (1999), however, suggest that they are not actually incompatible. Rather, the two models demonstrate two different means of making metaphor. Lakoff's model deals with stable metaphorical relationships that remain held within long-term memory. While Fauconnier's model demonstrates how new metaphors are created, and permits that these metaphors may be dynamic and transitory in nature.

4.3 Metaphorical framing

We have demonstrated then that metaphor is intrinsically connected to cognition. It is therefore not a great leap to surmise that the metaphors we use may actually help *frame* the way we think about the world. Haste writes that our use of metaphor is deeply connected to our models and understanding of the world (Haste, 1993). An example that Haste suggests is the Cartesian dualistic model, which in Western thinking has become metaphorically "mapped" onto many areas of thought, causing us to think in terms of polarities. Things must be either one thing or the other – right or wrong, good or bad, black or white, etc. Metaphors such as these may become deeply ingrained into the fabric of our daily lives. For example, there are many relics of the mechanistic metaphor in our everyday language. We talk about things "working like clockwork", "getting back on track", or "running smoothly".

According to Allbritton (1995), our minds organize conceptual metaphors into knowledge structures or "schemas", which influence the way that we use metaphor. These schemas can act as filters for information, hiding or minimising features that don't relate the different topic domains, and highlighting the ways in which they are similar.

Stern demonstrates that the metaphoric schema that one employs can radically affect the way one thinks about a subject (Stern, 2000). Suppose, suggests Stern, that one has a neighbour who is nice, quiet and polite. He keeps himself to himself, doesn't bother anyone, doesn't cause any trouble, and generally doesn't attract attention to himself. Then one day we learn that this neighbour

has been arrested as a suspected spy. This radically affects the way that we think about him. Now, rather than being seen as someone who is merely quiet and perhaps a little ordinary, he may become in our minds a cold, calculating and threatening person, or we may see him as a clever character with an exciting double life. Whichever view we take, our view of the man is altered, and our beliefs about him are considered in a new light. We might look back over our memories of this neighbour and remember past encounters with him in a new light. We might remember perhaps that he always seemed to be interested in electronic gadgetry, which at the time seemed simply eccentric, but is now explained by his secret occupation. This new way of thinking about our neighbour “the spy”, says Stern, has caused us to think about him differently. We have applied a new metaphor or *schema* onto our old knowledge about something, and it has caused us to restructure and reorganize our beliefs

Ritchie suggests that the way that a particular metaphor is interpreted depends on the amount of common ground that is shared between the speaker and the hearer (Ritchie, 2004). The details of how a metaphor is interpreted depends on the situation, historical contexts of the communicators, and so on. Ritchie demonstrates this with an imagined conversation between two old friends who have not seen each other for a long time. During the conversation, one of them says “my wife is an anchor”. How this comment is interpreted by the hearer depends on what he already knows about his friend and his friend’s relationship with his wife, as well as on any new information that he’s just learned. To quote Ritchie directly, it could mean: “you seem a lot happier than the last time I saw you; you used to be discontented and easily distracted, now you seem much more settled and at peace with yourself”. Or it might be interpreted as: “You sound like you have become bored with life; you used to be eager to try new things, but now the old zest for life seems to have become dulled.”

Sometimes, says Ritchie, a metaphor is only treated in our minds as a superficial likeness between one conceptual domain and another. This may be the case if the metaphor makes immediate sense, or if the tempo or context of the communication means that deep analysis of a metaphor isn't possible. In many situations, however, metaphors are actually processed very deeply. According to Ritchie, metaphors are often a means of making connections between pre-existing webs of ideas and concepts in our minds. In this manner, suggests Ritchie, metaphors can open up new and subtle connections in thought and feeling between different conceptual domains.

Chia (1996), has expressed similar views about the way that metaphor can unlock new ways of thinking and communicating. Chia wrote on the process of "metaphorization" and how it affects our way of thinking, arguing that, not only does metaphor affect the way we think about things, it also has a special function as a communicative tool. Metaphor, says Chia, allows us to use language more economically, and it also allows us to describe things that could otherwise not be described using literal language. Metaphor alludes to that which is intangible and hard to express in words. Chia's own words beautifully describe the illuminating effect of metaphorization, in a statement which seems to me to be reminiscent of an inclusional perspective he writes:

"Metaphors, by speaking of what remains absent, draw our attention to the significance of the empty spaces between literal concepts,"

This property of metaphor, suggests Chia, means that it can be both disturbing and positive with regards to our pre-existing language and ideas; metaphor challenges us to reconsider hitherto taken-for-granted ideas. To quote Chia again:

"metaphorization [...] is the endless intellectual task of de-ossifying thought."

Ossification is the biological process of laying down bone. By referring to metaphor as having a “de-ossifying” effect, Chia is suggesting that metaphor can break down entrenched structures that have become established (or laid down) over long periods of time. From this, it becomes obvious that not only is metaphor a means by which we *frame* our understanding of the world, but it can both *promote* and *communicate* paradigm-shifts, causing us to radically rethink previously entrenched ideas.

4.3.1 Metaphors and models

Some researchers have made a distinction between that which is merely metaphor, and metaphorical frameworks that have become developed into *models* (Eliasmith, 1998; Hill and Levenhagen, 1995). Eliasmith, says that there is an important conceptual difference between model and metaphor: a metaphor or an analogy, leaves room for interpretation by the hearer, allowing them to make their own connections between the source and target domains (Eliasmith, 1998). A model, however, does not allow for any such interpretation; Eliasmith refers to a model as a “controlled metaphor”, where every aspect of the relationship between the model and reality is accounted for. So, for example, if a scientist were to say: “the atom is like a solar system” it would allow hearers to interpret this in their own way, and to generate their own mental imagery. A model, however, would consist of a diagram, a prototype, or a mathematical description that allowed no room for interpretation by the hearer, other than the one that the scientist explicitly intended.

Hill and Levenhagen point out a similar distinction between metaphors and models in organizational management (Hill and Levenhagen 1995). In organizations, say the authors, mental models provide frameworks for how things should fit together; they highlight certain features within an organization, such as underlying values, shared interests and understanding. An model provides a framework for an organization’s policy, rationale and core cultural values. Like Eliasmith, Hill argues that a *metaphor* is not the same as a *model*. A model provides a complete and formalised framework upon which an organization may operate, while a metaphor merely represents a simplified or incomplete allusion to that model. Metaphors are, however, the means by which models are produced. It is through use and development of a metaphor that a model becomes formalised.

4.3.2 Metaphor as a tool for transdisciplinary study

So we have seen that metaphor has the power to *frame* and even direct our thoughts. We shall now look briefly at how metaphor may be used as a communicative tool, or as it is often referred to in the literature, how it may be used as a communicative *vehicle* (Judge, 1991).

Petrie and Oslag (1993) describe how metaphors may be used to help students learn, by using a student's prior knowledge as a metaphor for new information. This is using metaphor in a very basic sense, as described at the very beginning of this chapter: taking knowledge from one domain and applying it in another. Petrie and Oslag explain that what one is actually doing in teaching using metaphor, is to use an existing "schema" that the students already understand, to teach them about a new subject.

It is immediately obvious that using metaphor as a "vehicle" for communicating new ideas in this way may have application other than in the classroom. For example, one could also use metaphor to transfer knowledge from one subject domain to another. Bohm and Peat have discussed this idea in their book on creativity in science (1987). Bohm and Peat suggest that particularly in science, metaphor can act as a tool to cross barriers between disciplines. Moreover, they suggest that communicating across disciplines in this way can be highly beneficial, as it encourages scientists to consider old information in a new way.

Like Peat and Bohm, McGregor also describes metaphor as a transdisciplinary tool (2004). Reflecting Reddy's conduit metaphor, McGregor suggests that metaphor may be used as a *passageway* that allows people to transfer knowledge from one domain to another. Moreover, McGregor emphasises that the *spaces* between disciplines are also interesting, and rather than continually trying to *cross* these spaces, it is far more useful to *explore* them, as the areas between disciplines are often fertile ground for the development of new ideas. It is in these spaces, suggests McGregor, that metaphor may come into its own as a communicative tool, to use her own words, creating a "temporary common language while we navigate between the disciplines".

4.4 Metaphor in the everyday world

4.4.1 Metaphorical schemas and human organizations

In recent years, there has been a trend toward overtly using metaphorical schemas to understand and work with *human* organizations. An early proponent of this approach was Gareth Morgan, who in 1986 published a book, titled “Images of Organization”, which was to become much quoted both by management and metaphor specialists. Morgan argued that when we apply metaphorical schemas to human organizations, they deeply affect the way we understand and act within them. In “Images of Organization” Morgan discussed a number of different metaphorical schemas, including “organization as machine”, “organization as brain”, “organization as living organism” and “organization as political system”. In later literature on the topic, some have suggested that Morgan’s approach is somewhat simplistic, as some of his metaphorical schemas are not developed beyond a fairly superficial level (Mangham, 1996). Nevertheless, his original text prompted many to reconsider how they think about human organizations, and is still frequently referred to in today’s literature.

In the concluding sections of this chapter, to further demonstrate how metaphors can frame the way we think about the world, I shall introduce some of the literature that has dealt with the effect of particular metaphors on our understanding of human organizations. I shall begin with the Cartesian/Newtonian machine metaphor, before moving onto organic or living systems metaphors, and will conclude with metaphors from the non-linear sciences, to include complexity theory and network theory.

4.4.2 Machine metaphors

As I discussed in Chapter 2, the mechanistic worldview is rooted in the works of Descartes and Newton. The machine metaphor has origins in this worldview, and treats systems and organizations as giant *mechanisms*, comprising parts that work together to make a functional whole. Machine metaphors were amongst the earliest to be applied to human organizational management, and even today, now that other viewpoints such as organic and non-linear systems models have gained popularity, the machine metaphor remains deeply engrained in many institutional regimes and processes, and even in our language. For example, when we speak of things “running smoothly”, or “ticking over”, we are using a machine metaphor.

Frederick Winslow Taylor was one of the most prominent amongst those who started the “organization as machine” metaphor in the early twentieth century (Lewin and Regine, 1999). In 1911 Taylor published a book titled “The principles of scientific management”, which became influential in the development of mechanistic approaches to organizational management. Taylor took the prevailing mechanistic view of science and translated it into a form for use in the workplace. Above all else he sought to make organizations more *efficient*. He used reductionist analysis to determine *laws* and *rules* for the workplace that could be applied to both machines and to human workers. Taylor made little distinction between the human and non-human parts of the organization; indeed he viewed human workers as parts of the machine itself. His goal was to improve the efficiency of each and every part of what he considered to be an entirely mechanical system. According to Lewin and Regine, although Taylor’s model has changed much over the intervening years, it is still the dominant management model today (Lewin and Regine, 1999).

When the mechanistic viewpoint is applied, it has profound implications for the way that we view and act within the world. Notably, when a system is viewed as a machine, the implication is that it is under the *control* of someone or something. Machine metaphors are associated with hierarchical structures, where someone or something, situated at the top of the hierarchy, has ultimate control over the system.

Rooted in the reductionist paradigm, the metaphorical “machine” is composed of parts, that each have predictable cause and effect relationships with the other parts. Unlike in an organic paradigm, where systems may “run themselves”, under the machine metaphor all events are initiated by another part (Haste, 1993). As a result of the strong cause and effect relationships, a system that is running under a mechanistic metaphor should run in a *predictable* fashion, and when something in the system goes wrong, the belief is that it should be possible to put it right by looking for a root *cause*.

According to Morgan, the machine metaphor can, and has worked successfully in the past, particularly in organizations that are concerned with mass production of identical products, are situated within a stable “environment”, and where the human elements of the organization are compliant (Morgan, 1996). Nevertheless, Morgan also points out that organizations that are run on mechanistic principles tend to be slow to adapt to change, and they can have a “dehumanising” effect on their workforce.

4.4.3 Organic metaphors

The idea of using organic, or biological metaphors was introduced by Bertalanffy (1968), who was one of the first to suggest that living systems might be viewed as *open to their environments*, rather than as the closed isolated systems preferred by the Classical Analytical approach. Since Bertalanffy, many more have used organic, biological and ecological metaphors to describe human organizations. Books have been written on “Corporate DNA” (Baskin, 1998), the notion of a “Living Company” (de Geus, 1997), at one point Microsoft were even working to develop a “Digital Nervous System” (Gates, 1999). Other examples of biological and ecological metaphors applied to organizations include: *genetic algorithms* for process management (Husbands, 1994), and the punctuated equilibrium model of evolutionary processes applied to organizational learning (Price and Evans, 1993).

The organic metaphor is associated with a very different view of systems than the mechanical metaphor. By contrast with the machine metaphor, where all events are expected to be under the control of someone or something, in an organic metaphor, systems are considered to be autonomous or self-regulating. Under a machine metaphor, systems are based on linear hierarchies; organic metaphors, however, treat organizations as integrated systems of interrelated processes and relationships.

As Haste points out, organic metaphors are *participatory* (Haste, 1993); they situate the individual *within* the system. In an organic metaphor, people exist *inside* the system and are part of it, rather than being outside of it and controlling it as was the case with the mechanistic metaphor. Unlike in the mechanistic metaphor, where control and prediction are key, the emphasis in an organic model is on harmony, participation and creating balance through relationships with others. Significantly, unlike in the mechanical metaphor, where people are either treated as controllers, or as dehumanised parts of the machine, within the organic metaphor, people within an organization are seen as living sentient beings, with thoughts, characters and feelings.

There has been a clear trend in organizational management towards organic metaphors, and particularly towards models of organizations as members of complex “ecosystems” (Morgan, 1996). In an ecological metaphor, the organization is believed to exist as part of an ecological system, competing with others for survival according to the principles of Darwinian natural selection (Broekstra, 1996). According to Morgan, in an ecological metaphor, the key to survival for the human organization is for it to locate a specialist niche, and to become specially adapted for that niche, thus minimising the effect of direct competition from others.

Where an organization is viewed as a member of a complex “ecosystem”, it is believed to act and interact within a wider context or environment which, for a human organization might encompass aspects of economics, sociology, politics and so on. To use a term from cybernetic theory: it is an *open* system. The organic organization also interacts with other organizations in its environment, and as they relate with one another, this brings about change and adaptation; this metaphor therefore emphasises the importance of collaboration. Morgan argues that this understanding of the relationship between organizations and their environments is one of the key strengths of the organic metaphor. Morgan calls this view “organizational ecology”, and suggests that such a view helps us to understand the relationships between organizations and their environments.

4.4.4 Metaphors based on the non-linear sciences and network theory

In recent years a different organizational metaphor has begun to emerge. This metaphor is based on the new non-linear sciences, to include chaos theory, complexity theory, and most recently, network theory. I discussed the fundamental principles of the non-linear sciences in Chapter 2. To briefly recap here, in the non-linear sciences certain types of system, known as *chaotic* systems, are believed to be extremely sensitive to initial conditions, to the extent that they appear to behave in an entirely unpredictable manner. Other systems, which are referred to as *complex* systems behave in a similarly unpredictable manner, but under certain conditions will exhibit *self-organizing* behaviour, spontaneously producing patterns that are *emergent*. Often these emergent patterns occur at the boundaries between a chaotic system and one that is ordered; these areas are referred to as the “edge of chaos”.

Numerous authors have suggested that the non-linear sciences may be used as a metaphorical schema for human organizations (including: Lissack, 1997; Murray and Robson, 2002; Richardson and Lissack, 2001; and Battram, 1998). There is some debate as to whether complexity is a *metaphor* for an organization, or an actual representation of the *structure* of an organization (Murray and Robson, 2002). Many authors, however, choose to side step this issue and use complexity theory primarily as metaphor. And once again, like the other organization metaphors that I have discussed, the metaphor of “organization as non-linear system” highlights how a metaphorical schema can alter and *frame* the way we think about an organization.

According to Fairholm (2004), using the new sciences as metaphors causes one to think about organizations in terms of *relationship* and *culture*, rather than in terms of prediction and control. It also embraces the notion of boundaries that are semi-permeable, rather than solid as they are in the reductionist or mechanistic perspective, so creating a view where organizations are open and in communication with their environments.

Richardson and Lissack (2001), point out how using a complexity metaphor for human organizations requires managers to reconsider how they perceive *boundaries*. In a complex systems paradigm, the non-physical boundaries between people, teams, departments and so on, are considered to be as real and as significant as physical boundaries. Unlike the permanent and discrete boundaries of reductionist and mechanistic paradigms, in complex systems boundaries are emergent and temporary. This, say Richardson and Lissack, means that in a complex human organization, the boundaries of and within the organization are in constant flux, and the organization itself is undergoing constant reconfiguration. When using a complexity theory metaphor for human organizations, Richardson and Lissack suggest that the focus should be on organizational *coherence*, and that it is important for the people within to maintain a strong sense of organizational identity. According to Richardson and Lissack, this can be achieved through ensuring that those within the organization share common goals and viewpoints, and that they act together in a coherent manner.

4.4.4.1 Network theory metaphors

Most recently, researchers and managers have started to look towards *network theory* as a metaphor for use in human organizations (including Jones, 2004; Standifird, 2001; Pavlovich, 2003). The details of network theory will be discussed in the chapter that follows this. In essence, however, network theory is a novel paradigm emerging from complexity theory that seeks to understand systems by means of analysing the patterns of connection between nodes in a network. These nodes may be people, documents, web pages, computers and so on, and the connections between them may represent any of a wide variety of communicative relationships, from transactional exchanges, incidences of dialogue, connecting wires (in the case of computers), to name but a few examples.

In a world where globalized communication networks such as the Internet are rapidly gaining significance, network theory is increasingly being applied as a means of interpreting organizational structures and communication. Standifird has suggested that ideas from network theory may be used as a means of understanding institutional *rigidity* (Standifird, 2001), while Jones suggested that a network metaphor may be of particular use in *virtual* communities (internet communities, text message groups and so on), as these communities are in fact based around physical networks (such as, computer networks, phone networks) (Jones, 2004).

Recently, Pavlovich has proposed a particularly interesting application of the network theory metaphor (Pavlovich, 2003), where the dynamics of *jazz* music are treated as a form of network. According to Pavlovich, jazz is a fluid form of collective organization, where dynamic networks of musicians configure and reconfigure their organization according to apparently emergent patterns. Pavlovich noted how in a jazz performance, leadership of the group of musicians is self-organized, emerging fluidly over a basic rhythm that is co-created by the players. Rather than relying on hierarchical rules of leadership, the players often “switch” between soloist and supporting roles in an improvised and fluid manner. When jazz music works well, there is, observes Pavlovich a level of synchronicity, harmony and fluidity in their collective patterns. According to Pavlovich, the emergent networks of jazz music could be used as metaphor in human organizations, to create structures that are managed collectively and through fluid forms of leadership.

I shall discuss the practicalities and significances of network theory and the network metaphor in much greater detail in the following two chapters. Suffice it to say here that *conventional* network theory tends to focus on transactional relationships between nodes in a network, and the fluid metaphor described by Pavlovich is somewhat unusual in network theory.

4.5 Conclusions

To conclude, I have shown in this chapter that there is a lot more to metaphor than mere linguistics. Metaphor reflects the way we *think*, it has the power to *frame* our thoughts, and it may be used as a *communicative* tool, both within and between disciplines. Metaphor even has the capacity to promote shifts in established patterns of thought. The application of novel metaphorical schemas has been used as a means of changing the way we think about human organizations, and metaphor is today recognised as a powerful management tool.

To my mind, however, some of the more recent metaphors of organization are beginning to blur the boundary between *metaphor* and *model*. Complexity theory, for example, might be used as a metaphorical schema to apply the *ideas* of complexity to an organization, or as a means of describing the *structure* of an organization that exhibits complex behaviour. Network theory, which is the focus of my own research, is another example. The principles of network theory might be applied to an organization as *metaphor*, to try to understand the relationships within, or it could be used to create an organization that is *actually* networked. In fact, it might be argued that many organizations already *are* networks, and in these, network theory is less of a metaphor and more of a tool for description.

Nevertheless, irrespective of whether the framework we use is metaphor or model, it is still a tool that has the capacity to alter the way that we perceive a system. The newly-emerging models and metaphors that are based on network theory could, therefore, greatly influence the way that we understand an organization, and how we chose to act within it, or try to alter it. In the next chapter I shall explore the principles of conventional network theory in more detail, showing how they can frame the way we think of a system. I shall also point out some of the limitations of the conventional network model, and suggests that the organization of some kinds of network, particularly those found in the natural world, are not supported by such models. This will lead on to my own model, which I present in Chapter 6, which represents an entirely new structural and metaphorical schema that is based on living network forms.