

University of Bath



PHD

Love notes from a heretic: towards an anthropology of strategic supply

Price, Howard

Award date:
2004

Awarding institution:
University of Bath

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**LOVE NOTES FROM A HERETIC:
TOWARDS AN ANTHROPOLOGY OF STRATEGIC SUPPLY**

Submitted by

Howard Price

for the degree of PhD of the
University of Bath
2004

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“Earth laughs in flowers to see her boastful boys
Earth-proud, proud of the earth which is not theirs;
Who steer the plough, but can not steer their feet
Clear of the grave”

Ralph Waldo Emerson
Hamatreya, 1845

Love Notes from a Heretic: Towards an Anthropology of Strategic Supply

Summary

This research project started as an orthodox inquiry within the frame of established management theory. It asked: “How can firms in supply chains cooperate more effectively?”

The research experience, wider reading and reflection then led me to challenge the tacit assumptions which underpin much current management theory. I reached the view that our management theories contain faulty assumptions about the nature of the social world and the nature of knowledge. Further, it seemed that this faulty epistemology could have dangerous consequences for humanity.

I therefore reframed my inquiry. Rather than asking how firms could cooperate in the pursuit of profit, I asked how people could achieve improved intersubjectivity in the daily interactions of their working lives. The goal became the *re-enchantment of supply chains* in order to improve the prospects for the survival of the human species.

Such a goal is beyond the reach of a PhD Thesis, however. Here, I offer some early tentative steps. Drawing on experiences from a longitudinal ethnographic study of two large organisations over four years, I offer a set of models, or “ways of thinking”. These models attempt to address the challenge of how to improve the quality of our participation at work. They draw on a range of academic sources, including the emerging sciences of complexity.

Whilst theories of supply chain are considered, prior technical knowledge of supply chain theories is not required. In the ethnographic accounts, some names have been changed to preserve confidentiality. The Thesis is presented in a narrative style. Permission was given to write in the first person.

LOVE NOTES FROM A HERETIC: TOWARDS AN ANTHROPOLOGY OF STRATEGIC SUPPLY

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ACKNOWLEDGEMENTS

Whilst this document feels deeply personal to me, it is also borne out of a network of relationships. It would not have been possible without the influence, involvement and participation of many people. I would like to thank some of them as follows:

Thanks firstly to Richard Lamming, my supervisor, for ideas, encouragement, humour, and above all for his patience.

Thanks to my parents, Reginald and Sonia for their endless faith in me.

Thanks to Richard Thorpe and staff at the Business School and Department of Management at Manchester Metropolitan University for providing early inspiration, and to current and past members of the Centre for Research in Strategic Purchasing and Supply (CRISPS) at the University of Bath, including Pat Kelly, Christine Harland, Paul Cousins, John Hampson, Dorian Notman, Louise Knight, Stuart Humby and particularly Jane Gibbs who has always inspired me with the quality of her academic work as well as by being a good friend. Nigel Caldwell, also at CRISPS, wrote a PhD Thesis that gave me some confidence that I was not alone in my concerns about the weaknesses of orthodox management theory. Also thanks to several hundred members of IPSERA (The International Purchasing and Supply Education and Research Association) around the world, who have patiently listened to my presentations over the years, read my papers and most importantly joined me for drinks at the bar.

Thanks to Chris Barnes in the Graduate Office at the University of Bath School of Management, who responded with kindness and practical advice as I panicked about getting this thesis submitted in time.

Thanks to Raf Verheyden, who has always shown a warm interest in my wacky ideas, despite being an economist and despite my ideas seeming in opposition to his own. And to Andrew Walker at UMIST, who is one of the most genuinely decent people I have ever met. Stuart Price (no relation) sustained my appetite for management research during difficult times, with his own boundless enthusiasm for ideas and theories.

Barrie Collins at KPMG often asked me if I'd finished it yet, when he had much bigger things to worry about. David Galbraith, Adam Bennett and Rob Gotto made life in the world of consultancy not only bearable but often enjoyable, and Robert Bolton was the first person who ever tried to explain to me that "management is really all about conversations". Dr. Rory Bolton pointed out the relevance of insights from analytic psychotherapy to my inquiry (something which I might be able to pursue later). Further progress took place halfway up a hill in Oxfordshire, when a priest called Simon Parrett talked to me about Apophasis.

Many academics offered advice and information including Prof. Dick Hall, Prof. Dame Marilyn Strathern, and Prof. Tony Watson in the UK, Dr Thomas Choi, Prof. Kevin Dooley and Dr. Will McWhinney in the USA, and Prof. Charles Lumsden in Canada.

Quite a lot of other people, who I shall not name, went to great trouble to explain to me why doing a PhD was a complete waste of time and would not help my career or earning potential in the slightest. Nobody with a PhD ever said this.

Most important of all were the clients amongst whom I lived, as a management consultant and novice anthropologist. Too many to name here. I remember them fondly.

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SECTION 1: INTRODUCTION

CHAPTER ONE: INTRODUCTION

“The only science man did by this get
Was but to know he nothing knew;
He straight his nakedness did view
His ignorant, poor estate, and was ashamed of it.

Yet searches probabilities
And rhetoric and fallacies
And seeks by useless pride
With slight and withering leaves that nakedness to hide”

Abraham Cowley, *The Tree of Knowledge* (1779)

What this Thesis is About

My initial research interest was sparked by a then-current theme in supply chain theory. It had been suggested that cooperation between firms – particularly between buyers and suppliers – could be a source of competitive advantage (e.g. Carlisle and Parker (1989), Lamming (1993)). I was therefore interested in how cooperation between firms could be enhanced. I conceived of this challenge in terms of the need to create a new kind of team, a group of people from different companies working together as a single team. I decided to call this a *cross-organisational team*.

It seemed that the challenges facing such a team would be predominantly social rather than technical. Initially, I deduced that the keys to building a successful cross-organisational team would be roles and sub-cultures: that a particular set of roles and sub-cultures would make the emergence of a cross-organisational team more likely.

After further consideration of theories, and drawing on a wider range of literature, I became concerned that the prevailing theories of management and supply chains contained a number of tacit assumptions about the nature of the social world and the nature of knowledge. These unstated assumptions were profound and seemed to exert significant influence on management theory. Further, these assumptions appeared to be flawed: It seemed that management theory contained *faulty epistemology*.

Having reached this belief through orthodox academic inquiry, I now found myself in the awkward position of having become a *heretic*. This Thesis is therefore heretical: It takes a position that is to some degree out of line with what is considered legitimate. This makes it a risky enterprise, but I hope that my enlightened inquisitors will appreciate that heresy is a necessary antidote to hegemony.

I now needed to reframe my inquiry in the light of this heresy. Rather than ask how firms could cooperate more effectively, in pursuit of profit, I asked how people could develop improved intersubjectivity in the daily interactions of their working lives. No longer was the improvement of the profits of particular firms my concern: this had become trivial. My goal was now the re-enchantment of working life and improved prospects for the survival of humanity. So, no pressure there then.

Furthermore, my research now nursed a secret. I was using intersubjectivity as a trope. What I was really exploring was love: *Love in organisations*. In inquiring into how to increase love in organisations, I faced many challenges. The social world is a hierarchy of interconnected complex processes, and we cannot study it objectively because we are embedded in it. Yet, perhaps the quality of our participation at work might be significant?

How my inquiry evolved is narrated within the Thesis.

The Structure of the Thesis

The overall structure of the Thesis is as follows

Section 1, this current section, gives a very brief *Introduction* to the Thesis and its structure

Section 2 provides a *Critical Review of Current Theories*. Here some current theories are briefly outlined, followed by a relatively detailed critique of some of their epistemological assumptions. Finally, an alternative, heretical research agenda is outlined as a consequence of the critique of orthodox theories.

Section 3 outlines the *Research Objectives, Philosophy and Approach*. The research philosophy applied is stated and contrasted with that of other researchers in this domain. The research questions are listed and put into context (Chapter 5, page 80). Initial efforts to develop a conceptual framework to guide the inquiry are described. The choice of research methods is explained.

Section 4 presents *Field Accounts and Interpretations*. Here, a set of ethnographic accounts is presented, followed by an outline of how the initial theoretical models were developed further during the course of the research. Finally some interpretations of events from the Field Tales are offered.

Section 5 is devoted to *Addressing the Research Questions* and offers *Conclusions* and suggests *Potential Implications* from the research.

Section 2 follows this short introduction. It opens with Chapter Two, which introduces some current supply chain theories. The overall structure of the Thesis, including Chapter titles, is shown in Table 1, below.

Table 1: Overall Thesis Structure and Chapter Titles

Section 1: Introduction

Chapter 1 Introduction (This current chapter)

Section 2: Critical Review of Current Theories

Chapter 2 Current Theories

Chapter 3 A Critical Review

Chapter 4 A Post-normal Research Agenda

Section 3: Research Objectives and Approach

Chapter 5 Confessions of a Barefoot Empiricist: Research Philosophy and Approach

Chapter 6 Research Design

Chapter 7 Fieldwork and Development of Ethnographic Accounts

Section 4: Field Tales and Interpretations

Chapter 8 Tales from the Field

Chapter 9 How the Theoretic Perspective Evolved

Chapter 10 Teasing Meaning from the Field: Interpreting the Research “Data”

Section 5: Addressing the Research Questions

Chapter 11 Addressing the Research Questions

Chapter 12 Conclusions and Potential Implications

The Thesis follows a narrative style. In keeping with this, the research questions are introduced in context through a gradual explication rather than being baldly stated at the outset.

**SECTION 2:
CRITICAL REVIEW
OF CURRENT THEORIES**

CHAPTER TWO: CURRENT THEORIES

Introduction

In Chapter 1, the subject of this Thesis was briefly introduced, along with an explanation of its structure.

In this current chapter, the concept of a “Supply Chain” is introduced. A range of supply chain theories are then briefly reviewed, followed by a more detailed consideration of two specific theories.

Readers of this Thesis do not need a detailed technical knowledge of existing supply chain management theories. An understanding of the general concept, and a flavour of the direction of current research will suffice. This is because the Thesis takes a markedly different perspective from that taken by the extant literature. Conversely, those who already have a detailed technical background in supply chain theory will be familiar with existing perspectives outlined briefly here. An alternative approach to supply chain theorising is developed in later chapters.

Overview of Some Current Supply Chain Theories

The term Supply Chain has been around since at least 1982¹. Initially, the term referred to the “internal” transactions and interactions taking place within a single firm. The term has evolved to encompass patterns of transactions between pairs of firms; to relationships between firms; and to the physical flow of materials and goods from suppliers, through organisations and onward to customers. In some cases the flow of income is also included in models. Some writers prefer to consider these patterns of interactions as “networks” rather than “chains”.

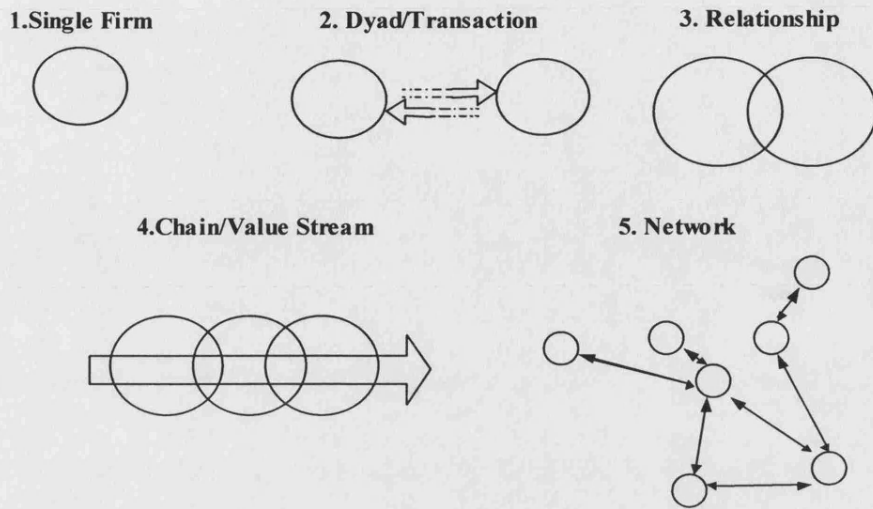
Levels of Analysis in Supply Chain Theories

In the following pages, we shall consider some supply chain theories classified according to the perspective taken as follows:

- Single Firm
- Dyad/Transactions
- Relationship
- Chain/Stream
- Network

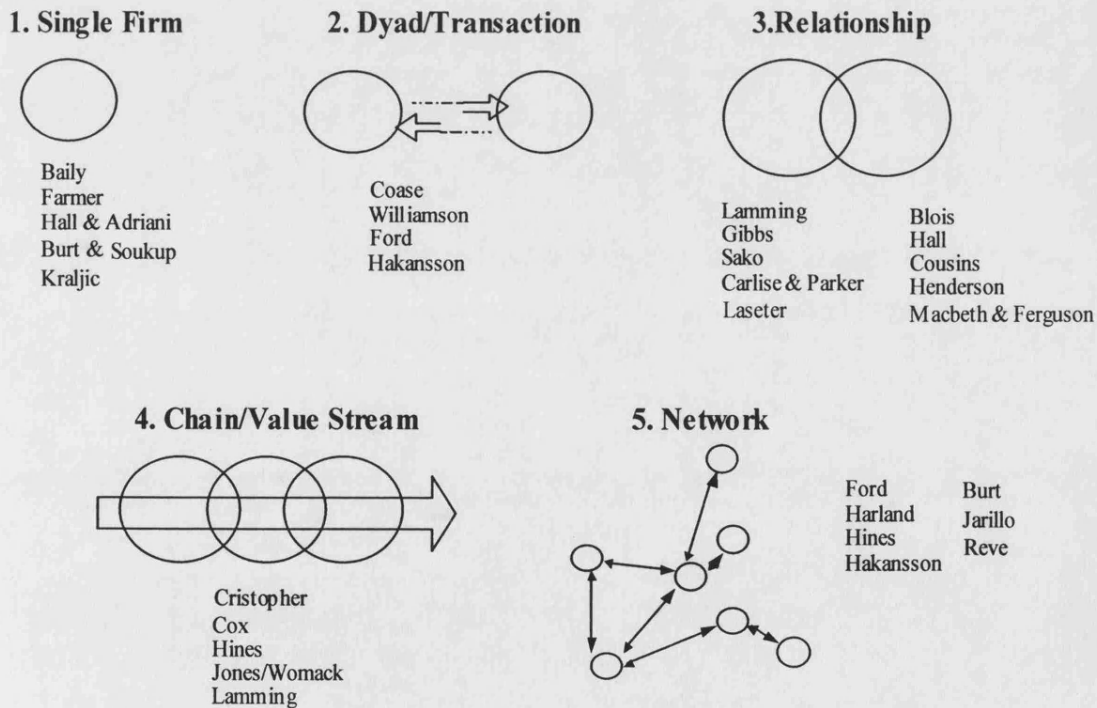
The basic perspectives are summarised in Figure 1 below:²

Fig (1): Levels of Analysis of Supply Chain Theories



Whilst few writers have limited themselves exclusively to a single level of analysis, theorists tend to focus on particular levels, as summarised in Fig (2):

Fig (2): Supply chain Theorists and their Level of Analysis



We shall now consider some of the themes in each level of analysis

The Firm as a Level of Analysis

Purchasing texts of the 1970's, stressed the "five rights" (quality, quantity, price, time, source.). This perspective saw purchasing as guardian of the firms boundary, feeding the organisation with products and services and protecting the organisation from sharp practices of suppliers (Baily (1978) Baily and Farmer (1979)).³ This view focused on what was happening within the boundaries of the firm, particularly the relationship between the purchasing function and other functions. A common message which emerged was the need for purchasing to be better integrated with other functions including Product Development, and – taking this thinking to its next logical step – the need to consider Purchasing as a process, crossing a number of functional boundaries, rather than as a "department". These themes appeared strongly in the 1980's and are still around in the current literature. It was recommended that activities of purchasing should be better integrated with other functions, particularly product development. (Kraljic (1983))

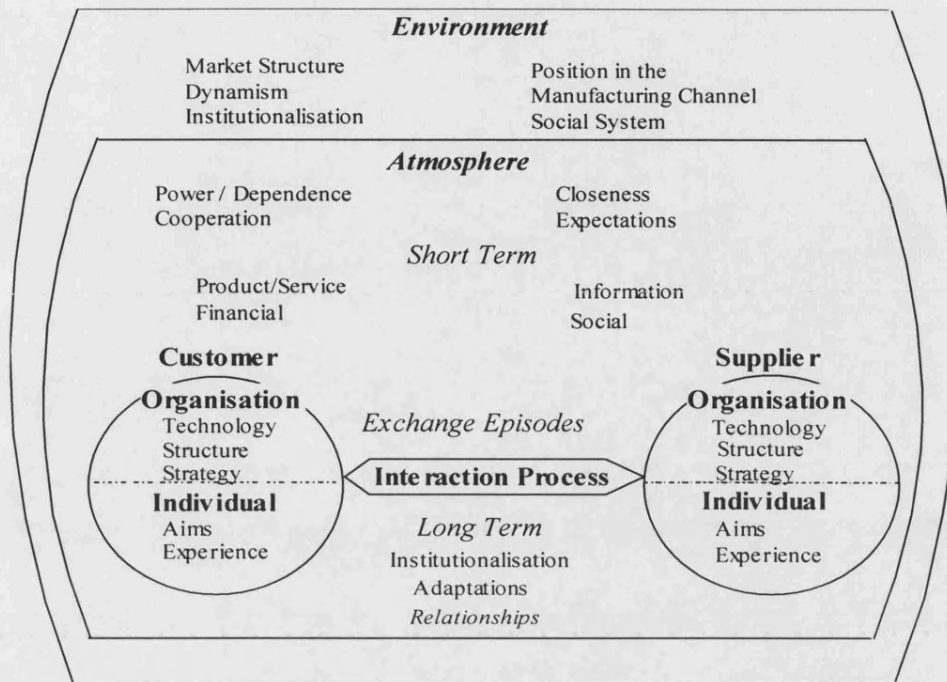
More recently, work by Hall and Adriani (1998) investigated tacit knowledge and learning within organisations, particularly how managers can recognise some of their tacit knowledge explicitly, and how this could guide strategic choices and the management of supplier relationships.⁴

Dyadic Transactions as a Level of Analysis

Transaction Cost Economics (TCE) began in the 1930s and New Institutional Economics developed from it beginning in the 1960s (Coase (1937), Williamson (1986)). Efforts to apply this thinking to supply chains began in earnest in from the 1980's (e.g. Hakansson (1982), Ford et al (1990), Lamming (1993)).

TCE focuses on transactions between economic actors, who are considered as decision-making units. An important principle that emerges is "bounded rationality": the recognition that actors may not be able to weigh up all relevant facts and make a genuinely "objective" decision.⁵ A further principle is that in any transaction there are hidden costs beyond the price paid including, for example, costs of switching suppliers. Applying this theory to supply chain puts purchasers into the role of economic actors taking part in transactions between dyads.⁶

Writers from the IMP Group (Industrial Marketing and Purchasing Group) consider transactions between dyads in some detail, describing how transactions evolve into relationships, and how such relationships are influenced by elements such as power, cooperation, closeness and expectations (Hakansson (1982), Ford (ed) (1990)). Their model is shown in Fig (3):

Fig (3) The IMP Interaction Model of Buyer-Supplier Relationships

The IMP Group's also examines networks as an appropriate level of analysis. In recent years they have focused their efforts on considering the macro/network level, rather than the dyad.

Relationship as a Level of Analysis⁷

Many writers have focused on relationship under the heading of partnership or partnering. A seminal work was Carlisle and Parker (1989) which was one of the first to argue strongly for a less adversarial approach (See also Macbeth and Ferguson (1994)).

For some time, "partnering" became a strong theme in the literature, leading to the formation of Partnership Sourcing Ltd by the CBI and DTI in the UK, whose definition of partnership sourcing is as follows:

"Partnership Sourcing is a commitment by both customers and suppliers, regardless of size, to a long-term relationship based on clear, mutually agreed objectives to strive for world-class capability and competitiveness"

The definition is laudable but rather bland. It is perhaps too easy to claim partnership has been achieved using this definition. Possibly as a result of a rather loose definition of terms, partnership gradually became devalued as a term in industry. Practitioners tended to adopt the language of partnering without any significant change in values – confusing the name with the thing named (i.e. The language of partnering with the "doing" of it.)

Cousins (1994) applied a multiple criteria decision modelling in an early attempt to "operationalise" some dimensions of customer-supplier relationship. Sako (1992) compared Buyer-Supplier relationships in the UK and Japan, contrasting arms-length, contractually focused relationships in the UK, with more obligational relationships in Japan^{8 9} and providing a useful, if exploratory, set of definitions of "trust".

Hall (1996) attempted to surface the tacit ideas and assumptions of the companies engaged in a dyad. His work seems unique in bringing together people from the two halves of a dyad, to compare their tacit assumptions about themselves and about each other.

Lamming (1993) (Building on work by Blois (1972)) looks at the relationship as something to do with the overlapping of the boundaries of two organisations. Since the relationship is something different from either of the two “relating” organisations, the “relationship assessment process” (RAP) is not something that can be done by the Buyer on the Supplier, or vice versa – it must be a joint undertaking between Buyer and Supplier (Lamming, Cousins and Notman (1995)). Lamming’s approach to dealing with the fact of relationship has included work on developing a tool to measure what is going on in a relationship

Outside the purchasing canon, another interesting perspective on buyer-supplier relationships is Henderson (1990), who researched relationships in IT outsourcing. Henderson looks at relationship in terms of two key dimensions: action and context. Action is about “what is going on”¹⁰ whilst context is about beliefs, intentions and commitment.

Gibbs (1999) introduced the concept of ERS: Effective Relationships for Supply. She suggests that the concept of partnership is flawed, in that it is an insufficient description of what organisations are either doing or aspiring to. What matters to them is effectiveness, and to this end she describes six different types of relationship. “Since effectiveness is not generic” she says, “there will not be one effective relationship, but a range”. She identifies the possibility that organisations could evolve from one relationship type to another, but this is by no means a necessity.

Laseter (1998) contributes an original perspective on cooperation and competition. He avoids seeing organisations as facing a choice between cooperation and competition when dealing with suppliers. Rather, he sees potential for competitive advantage by addressing both of these elements in the relationship. He calls this “Balanced Sourcing”.

The Chain, or Stream, as a Level of Analysis

Whilst there are significant differences between theorists about what a supply chain is, there are also some common elements in supply chain thinking:

- A view of the chain having a beginning and an end, and being in some sense “linear” in between. The chain is not normally described as a cycle, process or system.
- A view of some sort of linear flow along the chain, be it of goods, information, or “value”
- A perceived need to improve the flow, remove inefficiency, improve communication and identify and fix problems. This is seen as the way to improve business performance and/or profitability and/or customer satisfaction. This is described as managing the chain, or even re-engineering the chain.
- A tendency to see supply chains as singular entities: “The company’s supply chain”. This seems odd, since it is clear that any one organisation will have many supply chains, some of which may be interconnected.
- A sense of someone being at some sort of focal point in the chain, who can give direction to, or communicate important information to others in the chain. This position is sometimes called the “vantage point”.¹¹ All are not equals in the chain.

Since the mid 1990’s, there have been assertions that “competition is no longer between companies and is now between supply chains”(e.g. Jones (1984) Christopher (2001)). There seems little theoretical or research evidence to support this statement. One cannot buy shares in a supply chain, so in this important sense the statement is simply untrue. It might be accepted, however, that an organisation’s position in a supply chain, or the way it conducts business relationships in the chain, could affect its profits.

Womack and Jones (1994) use the term Value Stream rather than supply chain. This places an emphasis on the end customer as the arbiter of value, and stresses the need for all departments within an organisation, and all organisations involved in meeting the customer need, to remove unnecessary waste from the process(es) involved. The metaphor is that value flows toward the customer, and the role of everyone involved is to make this flow as efficient as possible.

Lamming (1993, 1996) considers the supply chain consequences of Lean Production – under the term *Lean Supply*. He criticises the vantage point approach, for reasons which we will consider later.

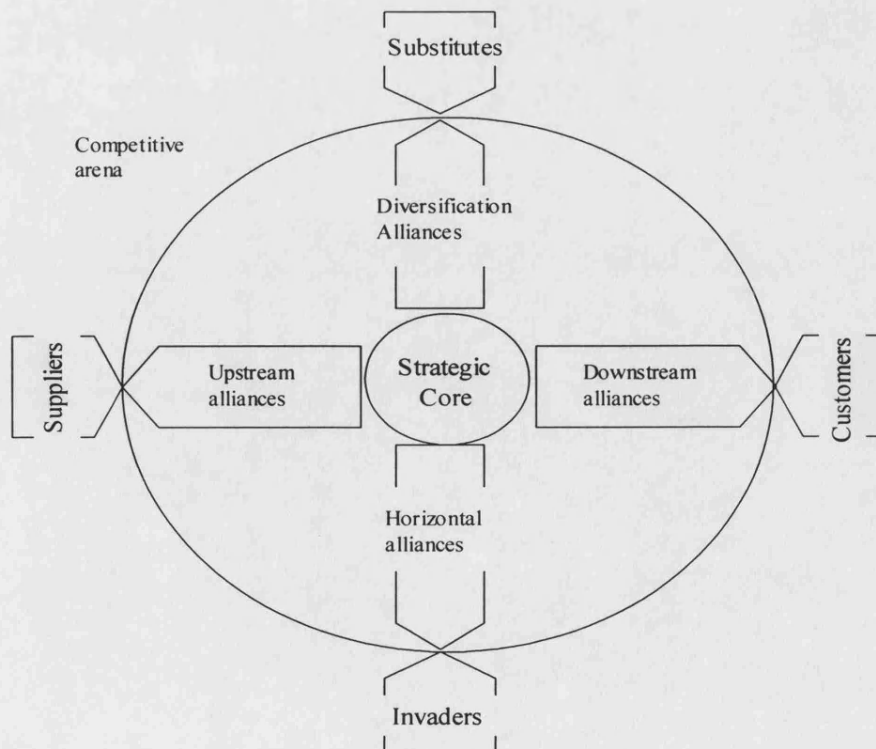
A range of theories therefore coexists within the supply chain perspective. Two theories that have been particularly influential are Critical Supply Chain Assets Theory (Cox (1996)) and Lean Supply (Lamming (1993)). These will be considered in a little more depth later in this Chapter.

The Network as a Level of Analysis

The IMP Group, mentioned earlier, (Hankansson (1982), Ford et al (1990)) pioneered the idea of considering industrial markets as networks. Suppliers may have relationships with each other as well as with the buyer; some companies may be both suppliers and customers, both competitors and collaborators. This makes thinking about what is happening in terms of a network seem more appropriate. IMP's network approach has also inspired strategy theorists. Burt (1992) identifies "structural holes" in the network as the keys to competitiveness – something close to an ecosystem view, whilst Jarillo (1993) grapples with the implications for an organisation trying to set itself up as the core firm in a network.

Reve (1990) makes an important contribution to strategy from a network perspective. He reconsiders Porter's "Five Forces" model, highlighting the opportunities for cooperation rather than rivalry, as shown in Fig (4).

Fig (4) Integrated Model of Strategic Management (Reve (1990))



This was an important step, since it demonstrated that every potential context for rivalry can also be seen as a context for cooperation - a perspective that had not previously been recognised in business strategy literature.

Other writers adopt a network perspective to supply chain theory, but with an interpretation more influenced by operations management theory (Harland (1996a, 1996b), Harland, Lamming, Cousins (1999) Lamming, Johnson et al (2000), Johnsen, Wynstra, Zheng et al (2000), Harland and Knight (2001)).

Harland (1996) differentiates the operations-based view of networks from that of IMP as follows:

“ The Swedish networks school... believes that industrial networks cannot be managed, and that actors within them merely cope”.¹²

Whereas Harland and Knight believe: “.. it is possible for an organisation to manage networks.” (Harland and Knight, 2001)¹³

The operations management branch of the evolving theory of industrial networks assumes that an organisation is managing, or attempting to manage, the network:

“IMP have reasoned that rational network strategies are not feasible, [whereas] a rational, normative approach to supply strategy is feasible [and] supply strategy can build on and externalise the rational operations strategy approaches, to extend them to inter-organisational networks.” (Harland, Lamming and Cousins (1999))¹⁴

Harland (1996) proposes an evolutionary framework for network strategy, based on Hayes and Wheelwright (1984), making it clear that she expects that the theory of industrial networks will evolve in a “rational, positivist” direction, incorporating existing theory from operations management. This emerging theory has been termed *Supply Strategy* (Harland, Lamming and Cousins (1999)).¹⁵

Hall’s work has focused mainly on the level of the inter-firm dyad, but in one paper he expresses the view that “... in the future the network, rather than the firm, will become the unit of operational analysis.” He suggests some novel consequences of this, such as a new organisational form – the Limited Life Product Specific Joint Venture (LLPSJV). (Hall (2001)) Hall also argues that tacit knowledge can be a source of competitive advantage. The rationale for this view rests on the economic significance of intangibles. A company’s market valuation is often a multiple of three, five or even ten times its net assets. The difference – “off balance sheet items” - represents the value of its intangible resources (Hall (1996), Hall and Andriani (1998) (1999)). This perspective in turn suggests an evolution of business theories from resource-based theories of the firm, to resource-based theories of the network, and onward to knowledge-based theories of the network (Hall (2001)).

Hines (1994) contributes an emphasis on building horizontal collaboration into the supplier network, in UK industries. He recommends that this should be done by creating supplier associations, mirroring those that operate in Japan.

Two Supply Chain Theories in More Detail

In the previous section, we went on a quick dash through the last twenty years of theory in supply chain. I have selected below two supply chain theories for consideration in a little more detail. These two theories take a significantly different view of supply chains. Having introduced the theories, I will refer to them in later chapters as touch points in order to contrast them with the theoretical perspectives developed from my research.¹⁶

Critical Supply Chain Assets Theory

Cox (1997p158) introduces supply chains by using examples of how Britain, in the period 1780 to 1850, achieved financial benefits through the monopolistic control of the international flow of goods. He defines a supply chain as:

“..that complex and interconnected network of relationships which exist between individuals and companies, in order to transmit physical products or services *in exchange* for value (money)” p208 (author’s original emphasis)¹⁷

He splits out the flow of money (payment) from the supply chain, and describes this as a separate chain – the Value Chain, recognising as he does this, that he is the only business writer using the terminology in this particular way.

Cox sees supply chains as key to business success. Companies, he suggests, can only achieve success by “owning and controlling critical supply chain assets” in order to create a monopoly (or near monopoly.) This is helpful, since it makes his world-view explicit. Successful business is about obtaining and exercising power. This view of business success can be considered as almost a form of corporate colonialism. Since the ownership and control of specific assets is seen as key, the theory is necessarily contingent (Lawrence & Lorsch (1967)),

Cox identifies the supply chain literature as particularly fragmented and in its infancy as a subject of academic study (Cox and Lamming (1997)). He calls for greater rigour, striving for insight into the fundamentals of business. The vehicle he proposes for the achievement of greater insight is abstractive reasoning.

The Critical Supply Chain Assets view is greatly influenced by political economy. Cox believes that:

“Companies do not exist to pass value on to customers, or to delight them. Companies exist to appropriate and accumulate value for themselves.” (Cox (1997) p149).

This echoes the assumptions of neoclassical economic theory, but strays into anthropomorphism. Joint stock companies are constructs, created, as Cox explains himself, as a way of helping entrepreneurs to manage business risk. To talk of a company appropriating value *for itself* is the economic equivalent of Ruskin’s Pathetic Fallacy^{18 19 20}

The concept of Critical Supply Chain Assets directly invokes the “truths” identified by Adam Smith in Wealth of Nations (1776):

- In conditions of relative scarcity, people will compete for things they value
- Self-interested people who are able to control scarcity will use their control of supply to appropriate value for themselves
- If monopoly is not possible, then competition amongst suppliers will allow buyers to appropriate more of the value.

In this world-view, humans are first and foremost rational, decision-making units and, importantly, rational *selfish* decision making units.²¹ This concept of human rationality first emerged in the Enlightenment, was systemised by d’Holbach in the 18th Century, and then applied to economics by Smith. Later, Max Weber introduced the concept of “rational economic man” (Weber (1958)), but only as one of a number of possible types of human behaviour.

I offer four observations about Smith's "truths":

Firstly, Smith's assertions may not be helpful in predicting what people actually do in a business relationship, and could instead be quite misleading. Secondly, Smith was not arguing that there was anything "ethical" or "good" about such behaviour. On the contrary, he argued simply that it was possible that socially efficient outcomes might be achieved in spite of such selfish behaviour, and then only if several very strict criteria were met.²² Thirdly, Smith's views were based on an economy which was trading physical goods; often staples such as food. Smith's economics was not designed to cope with 21st Century developed economies such as the UK and USA, in which most people are not involved in producing physical goods. Finally, Cox interprets Smith's "truths" to be about material scarcity. This may be a dangerous assumption. Information, leisure and entertainment are often stronger drivers of economic activity in developed economies.

We should further consider the assertion in CSCA theory, that the secret of business success is seen to be ownership and control of critical supply chain assets. Ownership, of course, assumes that the assets mentioned can be owned.²³ This means that they must be physical assets, or that they must be legally tradable. Control was perhaps a universal strategy in feudal economies, but in today's economy, influence might be the best that can be achieved²⁴: When knowledge assets are unhappy they can walk away.²⁵

Lean Supply

Over the last ten years, Lean Supply has developed considerable currency and influence in supply chain thinking. We touched briefly on some lean concepts in the "Levels of Analysis" section. Here, I shall investigate Lean Supply a little more.

Lean Supply grew in parallel with Lean Production (Womack and Jones (1991)). Lean Production itself appeared initially from the International Motor Vehicle Program (IMVP), an international research initiative sponsored by the automotive industry. Lamming contributed to the major publication that introduced Lean Production (Womack & Jones (1990)), and subsequently published a book which further explored and refined the Lean Supply concept (Lamming (1993)). This has been developed further in subsequent work which we shall consider later. The Lean Supply model of customer –supplier relationships is summarised in Table (1) (from Lamming (1993)):

Fig (1) The Lean Supply Model of Customer-Supplier Relationships (Lamming (1993))

	Lean Supply Characteristics
Nature of competition	Global operation, local presence Based upon contribution to product technology Organic growth and merger and acquisition Dependent upon alliances/collaboration
Basis of sourcing decisions	Early involvement of established supplier in new vehicle Joint efforts in target costing/value analysis Single and dual sourcing Supplier provides global benefits Re-sourcing as a last resort after attempts to improve
Role/mode of data/information Exchange	True transparency: costs, etc. Two-way: discussion of costs and volumes Technical and commercial information Electronic data interchange <i>Kanban</i> systems for production deliveries
Management of capacity	Regionally strategic investments discussed Synchronized capacity Flexibility to operate within fluctuations
Delivery practice	True just-in-time with <i>Kanban</i> Local, long-distance and international JIT
Dealing with price changes	Price reductions based on cost reductions from order onwards: from joint efforts
Attitude to quality	Supplier vetting schemes become redundant Mutual agreement on quality targets Continual interaction and kaizen Perfect quality as goal
Role of R&D	Integrated: assembler and supplier Long-term development of component systems Supplier expertise/assembler systems integration
Level of pressure	Very high for both customer and supplier Self-imposed Not culturally specific

Lean Supply encompasses some strong assertions which I have grouped under the following headings:

- The Evolutionary Perspective of Lean Supply
- The Flow of Value
- Lean Relationships
- Lean Innovation
- Going “Beyond Partnering”

We shall now consider what Lean Supply has to say on each of these topics.

The Evolutionary Perspective of Lean Supply

Lamming (1993)), introduced the idea that Lean Supply would be the next phase in the history of industrial customer-supplier relationships. He speaks of historical development from Craft Production to Mass Production, and from Mass to Lean. Interestingly, this almost resembles a Hegelian dialectic.

The Flow of Value

The “Flow of Value” has emerged as a dominant theme in Lean Supply:

“In Lean Supply, the entire flow from raw materials to consumer is considered as an integrated whole. Interfaces between stages (i.e. between companies – suppliers and customers) are thus seen as artificial – created not as natural transformation stages in the development of value, but as a result of the economic arrangement of assets (boundaries of firms) governed by many other factors (e.g labour skills, convenient configurations of technology... etc.)” (Lamming (1996a, p187)

Steps in the process which add more cost than value, or which slow down the flow of value, must be removed:

“The fundamental principle of Lean Supply is that the effects of costs associated with less than perfect execution...are not limited to the location of execution....This is a fundamental point, since Lean Supply does not recognise the traditional positions of customer and supplier, which tend to obscure the central quest for the removal of waste.” Lamming (1996b,p8)

This view therefore insists that any inefficiency in one part of the value stream will be borne as a cost to all the companies involved in that stream, and that companies therefore have an economic interest in improving efficiency not only within their own boundaries but also along the entire value stream:

“The firm exists purely as part of a grouping of firms that collectively provide a conduit through which value may flow to its destination (the consumer)” (from *Grappling with Value*, (1996) p8)

Within this framework, therefore, effective supply management (Lean Supply) is seen as being about removing impediments to the flow of value. These impediments – or inefficiencies – are seen as often located at or between the boundaries between firms. Such inefficiencies would include, for example, poor sharing of information, misleading or disingenuous commercial discussions and “opportunism” (i.e. cheating), whereas cooperative team working between customer and supplier would create opportunities to increase value or quicken its flow. Industrial customers and suppliers should see themselves as all “in the same boat” – engaged in the enterprise of delivering value to increasingly demanding consumers.

Lean Relationships

Lean Supply incorporates a number of behavioural expectations based on the “all in the same boat” premiss outlined above. Lamming posits a situation where industrial customer and supplier staff, working closely together, could feel more directly identified with their joint collaborative enterprise than with their legal employers – in effect seeing themselves as members of a “quasi-firm”²⁶. The cultural environment of such a quasi-firm would be quite radically different from what could be expected in a “traditional” organisational culture. Mutual trust, openness, honesty and the absence of “blame”, are seen as its characteristics. Lamming argues this from an economic perspective, since he considers that such a cultural setting would be essential for the removal of waste and the maximisation of efficiency through the value stream.

In this scenario, it is a collection of new behaviours and attitudes which remove “impediments to value flow”:

“The perspective necessary for this is one of humility – whereas the manner in which firms perceived themselves in the twentieth century might be characterised as bravado (or perhaps machismo).” Lamming (1996b) p8

Lean Innovation

Lean Supply puts great importance on shared technological development. This is argued partly from the “Core Competence” (Prahalad and Hamel (1990)) perspective, but also from the perspective that shared technical development is already a reality – albeit often on an informal basis (e.g Crane’s (1972) “invisible college”)²⁷. Further, the Lean Supply relationship model aims to foster increased innovation, removing some of the barriers presented by traditional adversarial or arms-length relationships.

Going “Beyond Partnering”

Lamming (1993) asserts that Lean Supply moves beyond partnering. His reasoning is that Partnering, as demonstrated in Japanese Automotive buyer-supplier relationships, is typically not a “partnership of equals” – there is always a Senior Partner and a Junior Partner, whereas the “logic” of Lean Supply gives primacy to the entire value stream, with no one organisation taking a “vantage point” position. The problem with having a vantage point, it is argued, is that this maintains the illusion that “the (industrial) customer is always right.” Such a customer is likely to make decisions that impose costs on other organisations in the stream, without having the humility to realise that such costs reduce the efficiency, and therefore the success, of the whole value stream.

It can be seen from this summary that the Lean Supply and Critical Supply Chain Assets theories contain some stark differences in assumptions. However, as we shall see in later Chapters, they also have much in common in terms of their underlying philosophies. For now, I shall highlight briefly some potential issues or concerns in relation to Lean Supply.

Lean Supply identifies the flow of value to the end consumer to be of supreme importance, but the concept of value is far more troublesome than is acknowledged by Lean Supply. “Value “ in business is an ambiguous term. It can be absolute or relative, rational or emotional – even existential. Flow is also a troublesome metaphor. We are encouraged to think of the flow as unitary and directional: later in the Thesis we shall see that this might not be an appropriate way to think about interactions between people in organisations.

Summary

This Chapter has given a brief overview of some supply chain theories, particularly from a purchasing perspective. Two theories were considered in more detail – Critical Supply Chain Assets and Lean Supply. These theories will be referred to from time to time and compared with the evolving theoretical position of the Thesis.

Endnotes

¹ Oliver and Weber (1982)

² This categorisation is developed from Harland (1996a) I have added an additional level – the Relationship itself as a level of analysis.

³ Within this section, I am not making any value judgements about whether such a world-view is “right or wrong”

⁴ Much of Hall’s work is also at the level of Dyadic relationships – covered later in this outline

⁵ This idea comes from Simon (1965), but found its way into the Strategic Supply literature largely through Williamson, and because of this circuitous route, some of the behavioural depth of Simon’s original concept was lost. More on this later in the Thesis.

⁶ Recent case study work (Marshall (2001)) suggests that the transaction cost framework, though helpful, does not explain fully the outsourcing behaviour of firms

⁷ There is clearly some overlap between this perspective and the IMP Group’s view of a pattern of transactions between dyads – which they term relationship. The (rather crude) distinction, which I have drawn around the writers in this section, is that they are more deeply interested in the “What is it?” of relationship, in the sense that Aristotle might have asked it. It is, in effect, two questions. Firstly, what is it – fundamentally – about a buyer-supplier relationship, which makes it a relationship? Secondly, since relationships change over time, what is it about a relationship, even when it changes over time, that makes it still a relationship? These are hugely important questions, offering us the opportunity not to be glib about such things.

⁸ It is tempting to see these research findings as further evidence of national stereotypes. But such stereotypes may have been exaggerated in the last decade. For instance, a presentation by Peter Hill of Nissan at Bath University gave the view that the approach of Nissan UK toward suppliers is more obligatory than that of Nissan in Japan.

⁹ A British writer who spent over 10 years in the Far East, has suggested that Japan’s business culture is in many respects similar to the UK (Boisot (1995)).

¹⁰ Henderson doesn’t use this terminology, but for those who are familiar with Korzybski’s theory of General Semantics, this might help to explain. (Korzybski (1933)(1950))

¹¹ Explained well in Jamming (1993)

¹² Hakansson and Snehota (1995) also expressed this view. However it is *not* the collective opinion of the entire IMP Group. Jarillo (1993) for instance, certainly expects certain actors in a Network to exercise control. Harland corrected this error in a later paper (Harland and Knight (2001))

¹³ This turns out to be a false dichotomy. Harland and Knight (2001) conclude that: “[N]etwork management is best seen as a proactive intervention in the network, and as a spectrum whose extremes are “reactive coping” and “controlling the network”.” This does not appear materially different from the IMP view.

¹⁴ There is a potential conflict here between Lean Supply and the Strategic Supply perspective of Inter-Organisational Networks. Despite some creative use of terminology (e.g. “focal firm”) it is clear that there is a “vantage point” component in the network theory, whereas Lean Supply argues strongly against vantage points.

¹⁵ Not all the writing in this genre is at the purely conceptual level. Extensive empirical study of industrial networks in Japan, particularly in the automotive sector, has helped us to see some of the rich detail of the way these networks operate (Nishiguchi 1987, Jamming 1993)

¹⁶ Strictly speaking, Jamming does not consider Lean Supply as a supply chain theory. (Jamming (1996b) but other writers do (e.g. New and Ramsay (1997)). For simplicity, and particularly to avoid confusing readers new to supply chain theory, I have classified both critical supply chain assets theory and lean supply as supply chain theories here. However, it will be clear to all readers that the two theories outlined have significantly different philosophical positions.

¹⁷ There are a couple of observations, which I will offer regarding Cox’s definition. He uses the word network, perhaps suggesting that his work ought to be classified with the writers on networks, listed below. But this definition is the only place in which the word network appears in the whole of his book. The rest of the text takes a very clear view of the chain as a linear flow. He also uses the word relationship, but it is clear from the text that Cox perceives relationship as a series of financial transactions – exchanges of money for relatively scarce goods or services.

¹⁸ Attributing human motives and feelings to things, rather than to persons.

¹⁹ I fully recognise that in the “eyes” of English Law, a company can be a separate “person”. However, this does not mean that it *is* a person. This is just an example of one fictional construct trying to deal with another fictional construct. A logical typing problem. More on this later.

²⁰ Cox could have said, perhaps more carefully, that companies exist to accumulate value for their owners, or for their stakeholders. But even this view would have been overly simplistic. Stakeholders’ objectives may not be entirely congruent, and – whether through incompetence, bad luck or fraud - executives do not always maximise shareholder value.

²¹ I have argued elsewhere (Price (1995)) that humans are driven to co-operate as strongly as they are driven to compete. This is a theme to which I will return later in this volume.

²² It is unfortunate, and possibly socially dangerous, that Smith’s stringent conditions are often overlooked today, by both politicians and economists. Smith’s conditions for the successful operation of a free market are not met in the UK, or in many other major economies. Smith was quite humanitarian in his outlook.

²³ Marx, another acknowledged influence on Cox, had strong views, of course, about the *ownership* of the means of production. (Marx/Engels (1844))

²⁴ Cox (1997) does touch, briefly, on alliances, but quickly moves back to a theory of the firm in which control is key. With the idea of control comes the idea of *power* – another key interest of Cox. These themes will also be explored later.

²⁵ Cox departs from Adam Smith in one key respect. Smith, like his friend John Hume, was concerned about the welfare of all. His view was that the invisible hand of market forces, controlled and constrained by some quite draconian rules, since forgotten in our rush to liberal consumerism, would operate for the benefit of everyone. Whilst accepting that fundamental selfishness is a driving economic force, Cox sees the distortion or subversion of market forces as the route to success. He therefore cites Microsoft as a prime example of the true path to business success (Cox (1997a))

²⁶ The term “quasi-integration” first appears in Blois (1972). The first appearance of Quasi-Firm that I can identify is in Schumacher(1978), although many writers attribute it to Eccles (1981) and some to Jamming (1993)

²⁷ The term “invisible college” was used by Robert Boyle in the 17th century, as an early term for what became the Royal Society

CHAPTER THREE: A CRITICAL REVIEW OF CURRENT THEORIES

Introduction

In the previous chapter, some current theories of supply management were reviewed and summarised. This current chapter examines some underlying assumptions which influence the theories previously considered. One might say that I am considering the *Epistemology* of current supply chain theories. This is done from a constructive postmodernist perspective. The approach is postmodern in the sense that I aim to highlight logical and philosophical flaws underlying current theories: It is *constructively* postmodern, in that rather than deconstruct for its own sake, I deconstruct in order to identify and address underlying weaknesses. The chapter focuses on four particular elements of current supply management epistemology. The implications of the weaknesses identified are explored in later chapters

The Economics of Flatland

“Whoever dies with the most toys, wins”, 1960’s protest slogan

We saw in Chapter One, that current supply chain theories rely heavily on themes from the established economics discourse. Cox, for instance, applies a neoclassical approach, with a philosophical position of humans as rational and economically maximising, endorsing Adam Smiths “truths”. Lamming, Harland and Hines accept the power of market forces and the voice of the consumer. Lamming (1993), Sako (1992) and Macbeth and Ferguson (1994) introduce concepts from New Institutional Economics (Coase (1957), Williamson (1986)) to support their theories.

In this section I examine critically some of the tenets of current economic theory. My aim is to demonstrate that these ideas severely limit the way we think about business in general and about supply chains in particular. Not only do they prevent us from considering supply chains as living phenomena, but they distort our understanding of ourselves and of each other. My title for this section “The Economics of Flatland” refers to the novel by Edwin Abbott¹. In Abbott’s story, the characters have only two dimensions, and have no knowledge that further dimensions exist. Discussion of a third dimension is forbidden. There are similarities in current economic theory, which sees one dimension of human behaviour as certain, whilst denying the existence of others. The dimension which is recognised is selfishness:

“[T]he first principle of economics is that every agent is actuated only by self-interest.”²
Edgeworth (1881) p16

This is a dangerously narrow view of human nature:

“Of all imaginary organisms – dragons, ...missing links, gods, demons, sea monsters and so on, *economic man is the dullest*. He is dull because his mental processes are all quantitative and his preferences transitive.” Bateson (1987 p175)

“... the self in the form of *Homo Oeconomicus*, a wriggling and struggling monad, literally possessed by egotism and an amoral commitment to survival. Bookchin (in Reason 1994 p38)

“The love of money as a possession.... will be recognised for what it is, a somewhat disgusting morbidity, one of those semi-criminal, semi-pathological propensities which one hands over with a shudder to the specialists in mental disease.” Keynes (1931)

“Rational”, selfish, humanity is fundamental to economics and management theory. It is an assumption which is built into our theorising and influences our behaviour.

In the last two hundred years it has become such a pervasive myth that we fail to notice its absurdity. It has its roots in Western cosmology:

“Still, God was merciful. He gave us Economics. By Adam Smith’s time, human misery had been transformed into the positive science of how we make the best of our eternal insufficiencies, the most positive satisfaction from means that are always less than our wants. It was the same miserable condition envisioned in Christian cosmology.... An elevation of free will into rational choice, which afforded a more cheerful view of the material opportunities afforded by human suffering. *The Genesis of Economics was the Economics of Genesis.*” Sahlins (1996)

Secular influences also left their mark:

“Like many of the social sciences that were seeking to gain recognition at the end of the eighteenth century, economics aspired to the rigour and elegance achieved by classical physics...”

“What were these models? Essentially a product of Descartes’ mechanical philosophy and Newton’s law of universal gravitation”

“In ... Principles of Economics, Jevons wrote explicitly that: “the notion of value is to our science what that of energy is to mechanics””

“[Economics] thus remains wedded to a straw man of c1860 vintage.” Boisot (1995) pp14-16

A moment’s reflection highlights the absurdity of the conventional economic position:

“Economic Theory ... tends to suggest that people are only honest to the extent that they have economic interests for being so. This is a *Homo Oeconomicus* argument which is far from being obviously true, and which needs confrontation with observed realities”. Johansen (1976)

Sen (1994) uses two examples of alternative human behaviour to challenge the rational economic model: *sympathy* and *commitment*. *Sympathy* is the phenomenon in which our (visceral) feelings about a situation lead us to economic choices that are not selfishly maximising. *Commitment* is a phenomenon in which our actions are influenced by personal views, feelings or values. For instance, a situation may not make us personally worse off, but nevertheless we may be determined to act to stop it.

The theory of utility, a key concept in economics, requires absolute consistency in the behaviour of actors:

“A person is given *one* preference ordering, and as and when the need arises this is supposed to reflect his interests, represent his welfare, summarise his idea of what should be done, and describe his actual choices and behaviour. Can one preference ordering do all these things? A person thus described may be “rational” in the limited sense of revealing no inconsistencies... but if he has no use for these distinctions between quite different concepts, he must be a bit of a fool. *The purely economic man is indeed close to being a social moron.* Economic theory has been much preoccupied with this *rational fool* decked in the glory of his one all-purpose preference ordering.” Sen (1997) p336

A tragic consequence of our acculturation of the myth of economic “man” is its widespread influence over the business world. Jensen and Meckling (1994) challenge this prevailing view:

“The growing body of social science research on human behaviour has a common message... individuals... respond creatively to the opportunities the environment presents, and they work to loosen constraints that prevent them from doing what they wish. *They care about not only money, but also about almost everything – respect, honour, power, love, and the welfare of others.*”

Yet even Jensen and Meckling fail to see that some of their assumptions about human nature are of a particular, acculturated, western twenty-first century behaviour. For example:

“*He, or she, prefers more goods to less. Goods can be anything from art objects to ethical norms*”
 “*He or she cannot be satiated... always wants more of some things...*”³ Jensen and Meckling (1994)
 p4

Anthropologists recognise that this thirst for more is not common to all societies.⁴ Some regard this obsession with quantity, a strong feature of Western twenty-first century societies, as *pathological*:

“The materialist superstition is the belief that quantity (a purely material notion) can determine pattern.... It is, of course, a basic premise in contemporary economics and therefore one of the factors which determines international chaos as well as ecological disaster...” Bateson (1987) p60

“... and of course nations become addicted to having a continuously increasing GDP, which is exactly the same sort of problem as the palm tree [which grows until it falls over]. You cannot take a variable in an interlocking system and have it change continuously in the same direction.” p131

“[E]conomics has been incurably growth-oriented and addicted to everybody growing richer, even at the cost of exhaustion of resources and pollution of the environment.” Boulding (1971)

This obsession with more, this greed, is a special case of social behaviour in recent centuries. Where does it come from and why has it evolved? The viewpoint of evolutionary psychology casts some light:

“Our responses to each other, to other social groups, and to the environment are ones which evolved during a time at which humans were essentially nomadic hunter-gatherers [of the stone age]” (Jackson, 2000)

Evolutionary psychologists think our desperate, conspicuous, commodity fetishism may be steered by our evolutionary need to attract a sexual partner. A sad position into which we have drifted through our runaway technological capability: our social evolution unable to keep pace with our technical evolution:⁶

“[Human society has] reached a degree of anonymity, social atomisation, and spiritual isolation that is virtually unprecedented in human history.” (Herber (1963) in Jackson (2000))

“The consumer way of life is deeply flawed, both psychologically and ecologically” (Wachtel (1989) in Jackson (2000))

The perversity of Homo Oeconomicus, and its influence on our societies, can be further illustrated by the myth of “Wealth Creation”. From a particularistic perspective, individuals can increase their personal “wealth”, in terms of the money value of goods personally owned. But wealth creation is a flawed concept: Individual appropriation of goods or money should more accurately be termed wealth *acquisition*. From the perspective of planet Earth our only wealth is the natural resources of our planet: Our goods come to us through the conversion of these resources. Thus, wealth can be redistributed – and even destroyed – but it can never be *created* within the capabilities of our current technology. By clinging to the myth of wealth creation, we allow ourselves to enjoy the narrow self-interest of conspicuous consumption whilst ignoring its disastrous consequences. (cf Boulding (1965) Korten, D (1999))⁷

Transaction Cost Economics (TCE) developed in the twentieth century, (Coase (1934), Williamson (1975)) focusing on buyer-supplier transactions and relationships. It might have been hoped that this new economics would adopt a more accurate view of human nature. Yet TCE’s conception is not markedly different from the neoclassical school. Economic “man” is still greedy and opportunistic, and merely constrained by knowledge (boundedly rational) TCE’s chosen problem is how to contract in a range of different circumstances. In addressing this question, the theory identifies the uniqueness of assets (“asset specificity”) as key to identifying the appropriate form of contract, and by implication, the appropriate form of organisation. Transaction costs are conceptualised, within the theory, as “friction” in the economic system; and things should be organised in such a way as to minimise this friction.⁸

Transaction Cost Economics therefore applies the same flawed assumptions of human nature at the microeconomic level. Ghoshal and Moran note the danger inherent in this view:

“Social sciences carry a special responsibility because of the process of the double hermeneutic: Its theories affect the agents who are its subject matter.” Ghoshal and Moran (1996) p39

Paradoxically, economic progress requires qualities which Homo Oeconomicus does not possess:

“... the advantage of organisations over markets may lie not in overcoming human pathologies through hierarchy, but in leveraging the human ability to take initiative, to cooperate, and to learn.” Ghoshal and Moran (1996) p42

Sadly, neither neoclassical economics nor the neo-institutionalists offer much insight into this crucial area of learning, cooperation and creativity:

“Innovation is a black hole that neo-institutionalists share with other economists and other social scientists, and one that they have tended to underestimate” Menard (2001)

In stark contrast to Homo Oeconomicus, Fehr and Gächter (2000 a,b) present evidence for *Homo Reciprocans*. Whilst selfish behaviour takes place, humans also have great potential for reciprocity and generosity. Selfish people can be influenced to behave more generously.¹⁰ Cooperation is encouraged in many societies even if it is against individual self-interest. Indeed, cooperation may have been key to our evolutionary survival:

“... feelings of anger against non-cooperators, fueling acts of costly punishment that appear irrational from the standpoint of individual interest, [help] to deter cheating. ... Increases in (a) the strength of the inclination to cooperate, [and] (b) the cognitive capacity to recognise cooperators, detect cheaters, and remember who was who... could therefore have been mutually reinforcing evolutionary trends” Ben-Ner and Putterman (2000) p93

Humans are often driven by motivations that have nothing to do with self-interest.

“the economics discipline as a whole will [in the long run] recognise that the old assumption of rational, self-interested individuals is not only an inexact and special approximation, but also *inconsistent with a scientific view of human nature.*” p9

“Because of their hunger and thirst after righteousness [humans] willingly endure the hunger and thirst of the body, chastity, pain, torment, and even death itself. Survival is not the highest human value.” Boulding (1971) p72

So far, we have concentrated on Homo Oeconomicus as a flawed concept. Another critical weakness in current economic theory is the inappropriate emphasis on material goods. Whilst the service economy is already much bigger than the manufacturing economy in both the UK and the US, Boisot (1995) points out that:

“We go on treating economic goods that come out of our heads as if they could be dropped on our feet.. They are fundamentally different.” p10

“Economics cannot continue to treat information as just some vague thing which is widely available and supports the process of economic exchange – it has to be increasingly considered as its main focus.” p20

Some practical examples illustrate the troublesome nature of an economics of information:

- How does an innovator find potential customers? Clearly, the idea must be shared, at least partially, with potential customers, but the more it is shared the more there is a risk that it might lose its value.
- When an innovator shares an idea with a potential customer, the economic situation is quite different from the sale of physical goods. How does the appropriate price for the idea emerge? Certainly not from any open market of ideas. Something vague is being offered. The outcome is uncertain. If a royalty deal is negotiated, what is the fair percentage? How is it estimated?

- In other circumstances, information with utility can be produced once and sold many times. There is no reason why the price has to be related in any way to the cost of the “production” of the information.

The rules that economics has devised for physical goods simply do not work for information:

“Traditional economic analysis was predicated on three maxims. The first, due to Marshall, was that nature abhorred discontinuities. The second, due to Samuelson, was that nature abhorred non-convexities: not only could individual and firm behaviour be described as the solution to simple maximisation problems... but the behaviour of the economy as a whole could be described as if it were the solution to some maximisation problem.

The third is the law of supply and demand; it has played a central role in the traditional economist’s tool kit....

Recent work in the economics of information has cast doubts on all three maxims. The world is not convex; the behaviour of the economy cannot be described as if it were solving any (simple) maximisation problem; *the law of supply and demand has been repealed.*”

Stiglitz, in Boisot (1995) p 13

Hall (1996) reinforces the importance of the information economy from another perspective. The market value (based on share price) of most companies is far in excess of the value of its physical assets. Market valuation includes customer goodwill and the value of associated brands, and the market’s assessment of the capability of the employees. In this sense the market for company shares already values “intangibles” more highly than physical assets. Boulding anticipated this:

“What the economist calls “capital” is nothing more than human knowledge imposed on the material world. Knowledge and the growth of knowledge, therefore, is the essential key to economic development. Investment, financial systems and economic organisations are in a sense only the machinery by which a knowledge process is created and expressed.” Boulding (undated)

Whilst the neo-institutionalists cite asset specificity as crucial in determining buyer-supplier relationships, intangible assets are difficult to identify (by their very nature), are typically not legal entities, and are not adequately addressed by contemporary economics.¹¹

This brief review of the economics of flatland has revealed that:

- Current economic theory - of all persuasions - sees humanity as greedy, intendedly rational (i.e. With the particular “rationality” of greed) and susceptible to cheating. I am not denying these features of human behaviour, but it is striking that there is no economics of reciprocity, or of generosity or of kindness. It is almost as if these features of humanity are deemed too rare to be worthy of analysis.
- Economics has little to offer us in relation to intangible assets. Since the majority of UK employment, and the majority of the share valuation of major companies, is not represented by physical assets, we – amazingly – have an economics which addresses, imperfectly, less than half the economy, and is silent about the rest.
- Neither classical economics nor TCE can deal with the economics of information. One can give away information and yet still have it. Sharing information can either increase its value or reduce it, depending on the context.
- We have little in the way of an economics of innovation, helping us to understand what innovation is, and how it is created.¹²

Economics is a “dismal science” indeed!^{13 14}

Having illustrated some of the assumptions from economics which underpin current business theories, we can now look at examples from supply chain theories in particular.

We start with the Theory of Critical Supply Chain Assets (Cox (1997)). As discussed elsewhere, Cox is an economist by training. He states his assumptions about human nature:

“The human condition is to live in a world of absolute and relative scarcity, and to compete to possess those things which are of value to individual human beings.” Cox (1997) p322

This is the classical economic theoretical position, not an objective statement of “truth”. Cox is candid about his theory of the nature of business:

“Companies do not exist to pass value to the customer or to delight them. Companies exist to appropriate and to accumulate value for themselves.” (1997) p105

Here, Cox makes an epistemological error, since elsewhere he states:

“The limited liability, joint stock company *is nothing more than a device* to make it easier for entrepreneurs to appropriate value from supply chains by taking risks with uncertainty, but with other people’s money.” (1997) p219

Cox therefore recognises that a company is a social construct but makes the epistemological mistake of anthropomorphism. A construct cannot – of itself – have any desire to accumulate “value”¹⁵. At least Cox is consistent. If, in his theory, economic man is of a classical, greedy and entirely predictable nature, then in anthropomorphising the company, Cox attributes to it the same dreary motives. Cox’s formula for business success contains two key ingredients: monopoly (or near monopoly) and innovation. Near monopoly can be obtained by “*leveraging critical supply chain assets*”. The use of this terminology is instructive, since it emphasises the influence of classical mechanics on the development of economic theory.

“Leverage”¹⁶ can be achieved by:

“... ownership and/or control of critical supply chain assets, which cannot be replicated or replaced by existing or potential competitors.” p251

Business strategy is therefore

“... a continuous entrepreneurial *war* of movement between individuals and companies to own, control and leverage critical assets in supply chains” p251

and supply chains are:

“... the complex delivery mechanism by which raw materials are transformed into purchasable products and services for end consumers.” p252

The metaphors of Critical Supply Chain Assets Theory are therefore of leverage, ownership, control and *war*. Success is defined as wealth. What of cooperation? This is portrayed as an occasional necessity in the service of acquisitiveness: Companies may form alliances¹⁷ but only in order to purloin an unfair advantage. Cooperation in pursuit of selfishness. What of some of the other human phenomena discussed in this chapter; sympathy, commitment, reciprocity, generosity and social values? These are not referred to: in Critical Supply Chain Assets Theory they do not exist.

What can we conclude from this review of theory of Critical Supply Chain Assets from the perspective of the Economics of Flatland? Well, it seems that the theory does live in flatland: The theory embraces Adam Smith’s “truths”. It leaves a wide vista of the social world as we all experience it, totally unexamined. And yet the context is crucial: If critical supply chain assets theory is positioned as part of a paradox or dialectic – as a partial and contradictory fragment of a mysterious and elusive “reality”, to be held lightly and on no account taken as an incontrovertible law - then it might be helpful. Nevertheless, the “double hermeneutic” brings it into our daily experience, whatever its epistemological flaws.

Leaving Critical Supply Chain Assets, we now turn to another supply management theory, Lean Supply, and examine how it has been influenced by the Economics of Flatland. Lean Supply takes a significantly different philosophical position from that of Critical Supply Chain Assets. Nevertheless, it embraces many of the beliefs of the current economic hegemony.

The end-consumer's desire for ever-increasing "value" is acknowledged.¹⁸ Whether this consumer greed is inherently a "good thing" or the result of marketing manipulation is left open for debate, but firms are encouraged to satisfy this market desire. The "invisible hand" is therefore implicitly

sanctioned. In this respect, Lamming agrees with Cox. Lamming differs from Cox, however, on the subject of why firms exist. The Lean Supply view is as follows:

"The firm exists purely as part of a grouping of firms that collectively provide a conduit through which value may flow to its destination (the consumer)" Lamming (1996a) p8

This view is quite radical – a challenge to the orthodox theory of the firm as the appropriate level of analysis in microeconomics. In Critical Supply Chain Assets, the firm is the unit of analysis, and success is achieved by establishing a "vantage point". In Lean Supply, the vantage point is abrogated. Instead a principle of cooperation between firms is proposed, in service of the end-consumer's thirst for "value"¹⁹. Lean Supply recommends a relentless focus on the removal of waste, particularly across the boundaries between companies, speeding the flow of value to the consumer. Doing this requires a "strategic attitudinal change" that is "as much a challenge for the hearts and minds of manufacturers as for [their] technical skills..." (Lamming (1993), pxvii). Cooperation between firms, in service of consumer needs, is perceived to reduce transaction costs between the cooperating firms. The metaphors which are adopted in support of this argument for greater cooperation, are revealing: they again invoke again the legitimacy of Newtonian mechanics. Cooperation, it is suggested, removes barriers, improves efficiency, and reduces waste.

In Lean Supply, therefore, some of the aspects of human nature which are missing from economics theory - cooperation, sympathy, reciprocity, generosity, social rules and values - are recognised as behavioural possibilities. In the case of cooperation, this is specifically recommended. What does Lean Supply assume about human nature? Within supply chains²⁰, humans are required to behave cooperatively. The tacit acceptance by Lean Supply of our reigning economic myths, implies that this is a challenge – that they need to set aside natural selfishness and behave in a calculatedly cooperative way. They are to cooperate to the extent that it is economically advantageous for them to do so, within the bounds of their knowledge.²¹ Yet it also requires that these same people should trust each other and avoid a "blame culture". And here there might be an epistemological flaw: one would be well advised *not* to trust Homo Oeconomicus. Hence, if Lean Supply is to encourage trust and the avoidance of blame, it will have a hard time squaring this with the requirements of either neoclassical economics or TCE.

At the "end" of the (linear) Value Stream, the consumer remains Homo Oeconomicus, with his or her private vices and public virtues²²: Lean Supply requires humans in such chains to suppress their short-term selfishness and behave cooperatively, because it is in their medium term selfish and acquisitive interest, whilst as consumers the baser desires of these same humans should proceed unfettered.

Summarising this review of the impact of the Economics of Flatland on some supply chain theories, we can see that the two current theories reviewed accept the *beliefs* which underpin orthodox economics discourse. Homo Oeconomicus is embraced by Critical Supply Chain Assets and tacitly accepted by Lean Supply. Such beliefs incorporate a narrow perspective of human nature.

Adam Smith (1776) recognised the consequences of his economic theory. Whilst he suggested economic growth was achievable, he anticipated that it would be accompanied by intellectual and moral decay. Within the Supply Management theories reviewed here, the capacity for humans to act unselfishly or compassionately *without material benefit* is avoided. Humans are envisaged as rational within the boundaries of the available information and their ability to process it, but rational in a very limited sense: *rational fools*.

The Occult Supply Chain

Occult: [L., occultus, cculo; ob and cello, to conceal]
Hidden from the eye or understanding; invisible; unknown; undiscovered
Occult lines in geometry are drawn with a compasses or a pencil and are scarcely visible.

In the previous section, we saw how the current legitimate discourse in economics has influenced our epistemology, introducing tacit constraints which limit our thinking about business in general and about supply chains in particular. Here, we consider another set of epistemological boundaries, this time in relation to the ways in which we allow ourselves to theorise about “The Supply Chain”. My aim is to descry the “*Ding an Sich*”²³ of the supply chain. I start my search from an unconventional position, by categorising supply chain theory as a branch of *Natural History*.

Bateson (1979) uses two terms he borrows from Jung²⁴: The terms are *Creatura* and *Pleroma*²⁵. Pleroma is the world of the non-living, whilst creatura is the world of the living.²⁶ Bateson’s fascination with the living world led him to consider “Epistemology as a branch of natural history”:

“In my life, I have put the descriptions of sticks and stones and billiard balls into one box, the pleroma, and have left them alone. In the other box, I put living things: crabs, people, problems of beauty, and problems of difference. The contents of the second box are the subject of this book.” Bateson (1979) p7

The world of pleroma, says Bateson, can be understood in terms of forces, impacts and quantities, but the world of creatura can only be understood in terms of differences, distinctions, patterns and relationships. This is where I take my starting point. Our current supply chain theory, with its pedigree in classical economics and Newtonian physics, sees supply chains from the perspective of pleroma. Hence, we get the language and metaphors of pleroma: leveraging supply chain assets, removing waste, removing barriers, and the linear flow of value.

Our supply chains do not exist, of course. They are constructs. When we talk of our “supply chain”, we are using a map, referring abstractly to a territory²⁷. We are applying a metaphor, saying: “it is as if this sequence of events were a chain”. Constructs like this are themselves from the world of creatura; from our human imagination. Ants build anthills: Humans imagine supply chains. Sadly, because of the epistemological flaws in our theories, and the way that we – being humans – tend to adopt our theories as if they were “real”, we have ended up with a rather poor construct, a construct of the wrong logical type.²⁸ We imagine that our “supply chain” is full of “thingish things”.²⁹ We “manage” our “supply chain” through leverage, through forces, through power, through mechanical efficiency. If a supply chain were a lifeless thing, then this would be a good way of managing it.

Now let us look at our supply chain anew, with a willingness to see it in all its full *creatural* glory. The presence of humans is its most salient feature. A supply chain is a *natural phenomenon*. The study of supply chains is therefore a branch of *natural history*.

Managing living things using forces, impacts and leverage lacks *adaequatio*³⁰. If we really want to understand supply chains, we need to think in terms of differences and distinctions, patterns and relationships.

Living in a world where we are taught that supply chains are full of forces, impacts and levers, it might seem strange to hear that it is more important to look for patterns, differences and distinctions. What sort of pattern should we be looking for? Bateson calls it “the pattern which connects”:

“What pattern connects the crab to the lobster and the orchid to the primrose and all four of them to you and me? And me to you?” Bateson (1979 p 8)

And, we should add, what pattern connects people in their imagined supply chains to each other? This pattern which connects living people in a shared construct, is what I am calling here the *occult supply chain*. Its defining contents are not products, trucks or sheds, but social interactions, ideas and emotions.

Our occult supply chain is full of people doing stuff: the minutiae of human action. If we were to watch for a while, we might not see people doing anything which is obviously speeding value on its way to the end consumer. We might similarly struggle to explain anything we see in terms of leveraging critical assets. What we would see is people socialising, passing the time, amusing themselves, getting by. Sometimes we would see people acting selfishly or cruelly towards each other. Sometimes we might see genuine acts of kindness. We would observe people performing rituals which help sustain the status quo, reinforcing relations of dominance and servitude or of mutual support. We might see much that is routine, mixed with occasional emotionally charged events. This is, I suggest, a supply chain containing a significantly different human rationality that that assumed by our conventional management theories.

The legitimate discourse tells us that goods and value “flow” in a supply chain. In our heretical discourse, we might see other things flowing more freely: rumours; gossip; unofficial gifts and favours; friendships and social exchanges; arguments and rivalries. We would see flows of playfulness, flows of moods, feelings and attitudes. Importantly, we would see flows of ideas, and perhaps the flow of ideas would often seem to be for its own sake, with no thought of personal economic advantage: people simply exchanging ideas because that’s what people do when they get together. “What people do when they get together” is crucially important to the alternative perspective which I am describing. The Ding an Sich of supply chains has to be something to do with their meaning as parts of human nature. Surely “supply chains” – being ultimately nothing more than concepts or maps – have no existence independent of humans? So it would be reasonable to suggest that the nature of our imagined supply chains is in some way linked to the nature of being human. Which begs a philosophical question: what is it to be human? Having talked myself into this question, I am going to have to deal with it. I will do so with humility and trepidation. Wolf offers a useful starting point:

“[T]he world of humankind constitutes a manifold, a totality of interconnected processes, and inquiries that disassemble this totality into bits and then fail to reassemble it falsify reality. Concepts like nation, society and culture³¹ name bits and threaten to turn names into things. Only by understanding these names as *bundles of relationship, and by placing them back into the field from which they were abstracted*, can we hope to avoid misleading inferences and increase our share of understanding.”
Wolf (1982)

This gives us a clue. What if we were to conceive of supply chains as “*bundles of relationship*”, only understandable within their own unique context or niche? This seems appropriate, but begs an obvious further question, what do we mean by *relationship*? I should warn the reader now that this little word will continue to dog my efforts throughout the rest of the Thesis.

As such, this early stab at understanding relationship should be seen as a reconnaissance for a longer journey. Back to Wolf:

“Relationships subject human populations to their imperatives, drive people into social alignment, and impart a directionality to the alignments produced. The key relationships... empower human action, inform it... and are carried forward by it. As Marx said, men make their own history but not under conditions of their own choosing. They do so under the constraint of relationships.... that... direct their will and their desires.” Wolf *ibid* p386

Readers will have noticed that I have stepped beyond epistemology into the realm of ontology. “A supply chain is a living thing, and a human thing, so what is it to be human?” I have asked. So far, I have suggested that being human has something to do with relationship. Carrithers (1992) suggests that ultimately, what is “unique” about humanity is our *sociality*:

“[T]he most general way of talking about sociality, is as *intersubjectivity*: an innate human propensity for mutual engagement and mutual responsiveness. Some of this propensity is cognitive or intellectual, some of it emotional. In any case human character and human experience exist only in and through people’s relationships with each other.” Carrithers 1992 p55

This is borne out in our individual psychological development. We learn intersubjectivity before we learn anything else:

“Every function of the child’s... development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological)... *All the higher concepts originate as actual relationships between individuals.*” ³²Vygotsky (1978)

Out of this pattern of development emerges our “ability to track a complex flow of human interaction”(Carrithers (1992)). We have “an ability, used continually in everyday life, to grasp what others are planning and thinking with a fair measure of success.” (p44) This ability to anticipate the “higher order intentionality” of our fellow humans, is tacit – we can’t articulate how we do it – although we all do it, to a greater or lesser extent. Whiten (1991) calls it “mind-reading”.

So the “supply chains” we imagine and inhabit, are necessarily human, and essentially concerned with relationship. To be human requires us to be in relationship, and to be in a supply chain requires us to be in relationship. We can therefore picture ourselves, as humans, existing in “bundles of relationship”, which both create us and are created by us, in complex, barely understood, recursive processes. We are social animals with the nascent potential for intersubjectivity; able to anticipate tacitly the intentions and thoughts of others without understanding how we do it; able to bring this capability into play constantly and unconsciously in the everyday milieu of our existence. Our current habit within one particular bundle of relationships – management theory - is to conceptualise another bundle of relationships as a “supply chain.”

Recognising supply chains as socially created and recreated through recursive patterns of interaction, means that we can learn little of importance about them from a distance using the subject-object perspective of logical positivism. We can learn about relationship only in, and through, relating:

“Learning the contexts of life is a matter that has to be discussed, not internally, but as a matter of the external relationships between two creatures. And relationship is always a product of double description.”

“It is correct ... to think of the two parties to the interaction as two eyes, each giving a monocular view of what goes on and, together, giving a binocular view in depth. This double view *is* the relationship.”
“As binocular vision gives the possibility of a new order of information (about depth), so the understanding (conscious and unconscious) of behaviour through relationship gives a new *logical type* of learning.” Bateson (1979) pp132-133

It is important to note that it is the *people* who are doing the relating in this paradigm, not the organisations. And it is in the nature of human relating that the process is metamorphic. Our Occult Supply Chain is an Heraclitean supply chain; *we can never step into the same value stream twice.*³³

Our occult supply chain is also *daimonic*. Good takes place in our supply chain, and so does evil. There is a shadow side behind the PR and the marketing hype, barbs beneath the repartee, points to be won in the boardroom discussions³⁴. This is in stark contrast to the general assumptions of most management texts, which assume a sort of sterile, amoral rationality within organisations. Instead, our occult version recognises the simple human fact that both aspects are present, and that the tension between them can sometimes be harnessed into creativity.³⁵

We also need to make sure that our heretical perspective incorporates what we know about people in groups. The established discourse sings the praises of teams in a rather uncritical way. Research suggests that group behaviour brings with it many difficulties. For some tasks, teams can be significantly less effective than individuals. Group pressure can result in defective decision-making (group-think) and, worse, the desire to remain part of a group can entice individuals into unethical or immoral behaviour.³⁶ We can safely assume, no matter what the level of management autocracy, that our occult supply chain will be an unpredictable place.³⁷ As Argyris (1982) observed: “Under carefully controlled conditions, people do as they damn well please!”

We should now take stock, and ask, given all we have considered, what *is* the Ding an Sich of the Supply Chain? Clearly it is not – fundamentally – about products, or “trucks and sheds”. These are merely the thingish things of pleroma. They have no life, no value or meaning, by themselves. We have experimented with ideas about relationship and relating. These seem more promising, more creatural, more fully-human. But we still need something to hang our hat on. What, then, is the “what is going on” of our occult supply chain?

I have a suggested answer: Our occult supply chain is a chain of *conversations*. I do not mean that we just sit around all day talking, or that human action in the world is unimportant. What I am asserting is the central role that conversation plays in how we cope, in what Heidegger would describe as the “thrown-ness” of our business lives:^{38 39}

“[The organisational environment] consists of nothing more than talk, symbols, promises, lies, interest, attention, threats, agreements, expectations, memories, rumours.... Words induce stable connections, establish stable entities... Agreement on a label that sticks is as constant a connection as is likely to be found in organisations.” Weick 1985, p128

“Word-work is sublime.... because it is generative; it makes meaning and secures our difference, our human difference – the way in which we are like no other life. We die. That may be the meaning of our life. But we do language. That may be the measure of our lives.”⁴⁰ Morrison, in Weick (1995)

Maturana and Varela take it further:

“In the case of insects... cohesion of social unity is based on trophallaxis, the flow of chemicals between individuals... In humans, social unity is based on *a linguistic trophallaxis*: a linguistic domain constituted as a domain of ontogenic coordinations of actions. We human beings are human beings only in language. Because we have language, there is no limit to what we can describe, imagine, and relate.” Maturana and Varela (1998) p211

“We work out our lives in mutual linguistic coupling, not because language permits us to reveal ourselves but because we are constituted in language in a continuous becoming that we bring forth with others.” p235 *ibid*

We create and recreate ourselves through *linguaging*:

“Words, as we know, are tokens for linguistic coordination of actions and not things that we move from one place to another. It is our history of recurrent interactions that makes possible our ontogenetic structural drift in a structural coupling that affords interpersonal coordination of actions; this takes place in a world we share because we have specified it together through our actions. This is so obvious that we are literally blind to it.”

“This... dimension of operational coherence of our languaging together is what we experience as consciousness and “our” mind and self.”

“Has the reader ever paid attention to the processes invariably entailed in the most trivial conversation: the generating of voice in language, the sequence in which words appear, the moment when speakers alternate, and so on? We usually do these things so effortlessly that everything in our daily life appears to us so simple and direct that we often fail to see its richness and appreciate its beauty. Nonetheless, it is a refined choreography of behavioural coordination.”

Maturana and Varela (1998) p232-233

Not only are our supply chains essentially chains of conversations, but these conversations are only partially conscious and explicit. In our everyday business lives, much of the content and process of our conversations is tacit.⁴¹ Our occult supply chain is full of *occult conversations*.

Wolf (Ibid), quoting Alexander Lesser, suggests we should see societies as “open systems... inextricably involved with other aggregates, near and far, in weblike, netlike, connections”.

Webs of *conversations*.

Having taking this alternative perspective of “supply chain”, it is time to look at the approach taken to supply chain in the literature. Is the occult dimension recognised? Is it challenged or denied?

Critical Supply Chain Assets (Cox (1997)) has little to say about relationships. It sees the human condition through the economist’s eyes: we are doomed to waste our lives competing with each other to gain things which we consider to be scarce. The associated theoretical model of “Relational Competence” (Cox (1996)) suggests by its name that it has something to do with relationship. The link is to relationship, however, in the very narrow sense of economic transactions. It is relationships between constructs – firms – that are the subject of the theory. Relationships between the people in the firms are not discussed: They are occult.

A further development within the Critical Supply Chain Assets school, is the concept of “power regimes” (Cox, Sanderson and Watson, (2001), Cox (2003)). This framework aims to help companies decide how they should “manage” particular relationships. In this theory, the factor guiding decision making about relationships, is the relative utility and scarcity of each firms’ resources. The focus is on the contractual position that the parties take towards each other, supporting the view that contracts drive business behaviour.⁴²

So here we have a theory which is perhaps well suited to the activities of “rational fools” living in “flatland”, but inadequate to the task of gaining a deeper understanding of how humans behave at work.

Lean Supply does focus on relationship:

“It has been said that there will be three key management tasks in the future: the management of change or transformation, the management of processes, and the management of relationships. The development of lean supply provides a strategic framework and a map for the third task: without it, industry cannot move forward.” Lamming (1993) p258

Yet this also perhaps exposes a weakness. The *management* of relationships is proposed. This epistemological position places someone (the “manager”) outside the “relationship”, taking a subject-object position. From the point of view of a supply chain as natural history, this is an error of logic. Individual humans are embedded in a process of relating. They cannot – whatever their formal position in a company – step outside the relationship and manage it as if it were a “thingish thing”. And in any case, what would they ultimately be trying to manage? The flow of ideas, emotions and conversations? The flow of intangibles? These are not things which can be “managed”.

Lean Supply offers a model of an effective buyer-supplier relationship using a number of dimensions. It also takes account of other theories which look more closely at what humans do in supply chains: Allen’s gatekeeper concept, and Crane’s invisible college, for example (Lamming (1993)). Lean Supply proposes particular behaviours, but it says little about what Stacey (2003) calls the shadow side of organisations. Hence, one could envisage a situation where Lean Supply became a legitimate discourse in an organisation, but shadow conversations continued to encompass different, and possibly inconsistent, themes.

Lean Supply has tried to investigate relationship in more detail. An early effort was the Relationship Assessment Programme model (RAP), which was an important epistemological move onto common ground with our proposed occultism. In introducing RAP, Lamming et al (1995) point out (though not in these terms) the difficulties of vendor assessment programmes, relating to the subject-object nature of their inquiry. If the customer assesses the supplier, then the assessment is one-way and the result is therefore not a shared understanding. The aim of RAP was that both parties in a dyad assessed the relationship, with the aim of developing a better understanding. Thus, the relationship is recognised as being of a different nature, ontologically, than the people in the firms individually. This comes close to recognising the importance of intersubjectivity.⁴³

More recently, the associated idea of value transparency has been developed within Lean Supply (Lamming et al (2001)). This aims to help companies to identify what information to share with each other. It is an interesting step, offering some potential for people to have conversations about what sort of conversations they agree to have: A spy hole into the occult.

A body of supply chain theory which appears somewhat compatible with my occult perspective, is the IMP school (e.g. Ford (1990)). This group of researchers is less confident about the potential for “managing” relationships between firms, more typically seeing people as “coping” within relationships. The IMP model recognises that a temporal sequence of interactions can eventually evolve into a relationship.

Closer still to the occult, is Caldwell (2002). Caldwell chooses to investigate purchasing work by watching it being done by people in middle management positions in a range of organisations:

“Management Research in the main does not dwell upon (or publish) what workers actually do when they work..” p235

“[I]f academics are not interested in the work of purchasing practitioners, then who or what is the audience for their output? One suggested interpretation is that there is very little connection between the output expected of the majority of academics who write about purchasing and the actual practice of purchasing” p242

“[A]cademics have downplayed ... tacit, embedded, socialised skills in favour of portraying purchasing as a purely technical problem solving activity.” P242

“[The academics’] strategic focus prevents the work with its continuity, politics, and “messiness” appearing as anything but technical. Hence the disparities between detailed objective measurement and the subjective behaviours presented.” P243

“... what happens in customer and supplier development teams; bizarre exchanges, the essential emptiness of which neither side acknowledges...”
 “[O]rganisational buying is far more embedded in friendships, customs, and community than the management accounts allow...” p259

Here at last we have almost crossed the void. This sounds like a message from the other side: From someone who has seen an occult supply chain.

Summarising this review of the occult supply chain, I have proposed a new perspective for supply chain theory, which sees supply chains as living phenomena, characterised by pattern and relationships rather than forces and impacts. From this perspective, supply chains are webs of conversations and emotions. Other supply chain theories either ignore this perspective or acknowledge it but only partially explore it.

The Non-Elephant Supply Chain

“If you can solve an equation by a formula, then its solution will *ipso facto* behave in a regular and analysable way. That’s what formulas tell you. And if you think the name of the game in dynamics is finding formulas for the solution of differential equations, your mathematics will only be able to study regular behaviour. You will actively seek out problems to which your methods apply and ignore the rest. Not even sweep them under the carpet: to do that, you must at least acknowledge their existence. You’re living in a fools paradise, or at least you would be if you were not too clever by half to be a fool.” Stewart (1997) p49

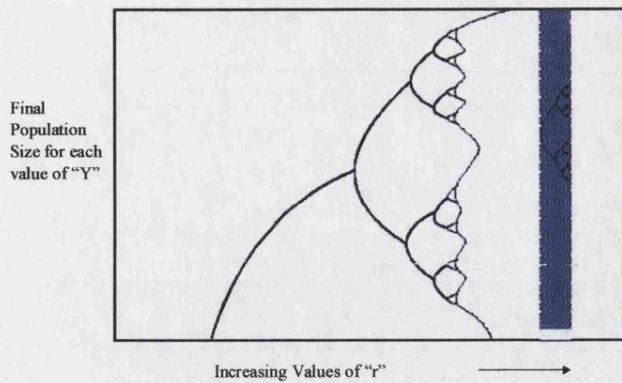
This section takes another perspective of supply chain thinking, in order to reveal further errors of reasoning in the dominant theories. Here we look at supply chains from the perspective of mathematical theories of Chaotics: a term used to encompass the related theories of Chaos and Complexity.⁴⁴ Chaotics is often referred to as a recent development in mathematics, but its roots lie go back a long way. Poincare’s attempt to solve the “Three Body Problem” in the late nineteenth century, for example, presaged many of the principles of chaos theory (Stewart (1997) p63). Complexity theory began to emerge in the early decades of the twentieth century.⁴⁵

We will first consider Chaos “Theory”^{46 47} in relation to supply chains. Chaos challenges some assumptions that have crept in to – and all but taken over – science over the last five centuries. At first sight, these assumptions seem quite innocuous:

- Simple equations usually produce simple results
- Complex equations usually produce complex results
- Small anomalies in data can typically be ignored, as they tend to disguise or distort the “reality”.
- Small perturbations in a system have small effects
- If the past behaviour of a system can be graphically represented by a straight line, then so can its future behaviour.

Mathematicians have come to realise that these assumptions are incorrect. Most equations⁴⁸ display unexpected behaviour when iterated (i.e. if the result of an equation is fed back into the equation, and the equation repeated many times).

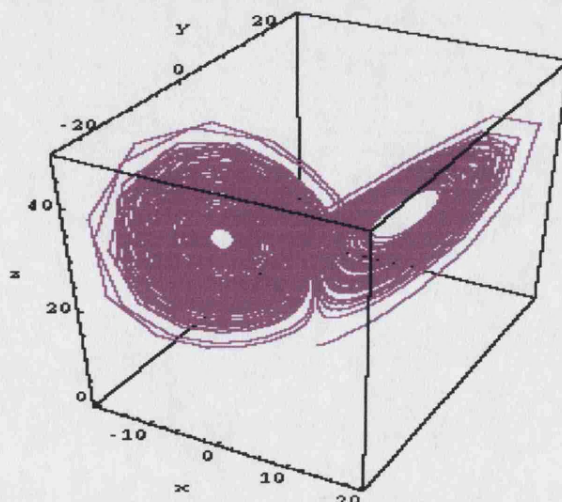
In the case of a simple repeated equation for the growth of an animal population over time, for example, (e.g. $x_{next} = rx(1-x)$, where x is the current population and r is the rate of population growth), for certain values of r , the graph starts off as a gentle curve, but eventually becomes very complex indeed, with periods where it looks almost random and other periods where it flips rapidly between different states (May (1976). This is illustrated in Fig (5) below.

Fig (5) May Logistics Curve/Bifurcation Diagram

Hence, merely by repeating a relatively simple equation, we can observe the emergence of a complex pattern of behaviour, and this pattern typically demonstrates the emergence of a multiplicity of potential states. There are times when the pattern appears completely random, but it is entirely deterministic.

Early attempts to model weather patterns mathematically considered the phenomenon in a simplified model using three dimensions: temperature, pressure and wind speed. The model was much simpler than “real” weather, containing only 12 variables. The relationships between these factors, each represented by a simultaneous equation, were plotted in “Phase Space” (Lorenz(1963))⁴⁹. If the model is then iterated, the resulting pattern demonstrates some important characteristics of non-linear mathematics. One of these characteristics is the emergence of one or more “attractors”. An attractor is a state around which a system or process tends to settle or cycle. In the case of non-linear dynamics, the pattern of events never repeats exactly: the lines plotted by the repeated cycles of the model may come close to each other but they are never identical. In this sense, the model never “settles” in the way we might expect a traditional model based on linear principles to settle. In the case of the non-linear model observed by Lorenz, the model demonstrated two attractors – a pattern that was later to be termed a “strange attractor” by Ruelle (Ruelle (1991)). The emergence of two attractors demonstrates the capacity of the system to cycle around two potential states, possible flipping from one attractor to the other at some point.

The Lorenz attractor is shown below in Fig (6):

Fig (6) Lorenz Attractor in Phase Pace

In both Fig (5) and Fig (6), the resulting graphs display “self similarity”: patterns at one level of detail are repeated at infinitely greater levels of detail. Mandelbrot (1982) termed these self-similar patterns “Fractals”. Currently, there is *no theory* which explains why these phenomena emerge.⁵⁰

These discoveries opened up to question the previous basic assumptions of mathematics listed above. Returning to these assumptions, the following corrections now apply:

- Most simple equations (and all equations with a “power”, e.g. X^2), when iterated, produce *patterns* which are at times simple and at other times highly complex. Often the behaviour shows periods of activity which look as though they are random but they are not. The behaviour is entirely deterministic.
- Small anomalies may not be “noise”: they could be part of the complex patterns described above.
- Small perturbations in a non-linear dynamical system at one point in time, can result in massive variations at a later point in time (The “Butterfly Effect”⁵¹)
- Even if the past behaviour of a system can be graphically represented by a straight line, one must take care. Over a longer timescale, it could display bizarre and unexpected behaviour.

These features of our existing mathematics were always there. It was just that nobody noticed them. Even now they are largely ignored in terms of our day-to-day common sense world.

So far, we have only considered abstract ideas: what equations do when you experiment with them. What about the “real” physical and natural world? Is there a connection between our less myopic approach to mathematics and what happens in nature? The non-linear nature of nature is widely recognised in the literature (Cohen and Stewart (1994), Stewart (1997)). May’s bifurcations were found to more closely model how real animal populations evolved. The lungs, blood vessels, lymph system, brain surface and digestive system of the human body are fractal. Bateson, in searching for the “pattern which connects” reached a philosophical position which seems to be supported by what has since been discovered in mathematical chaos:

“We can, after all, look at the clam and count the ridges, but in the process of growth the message of the DNA must be locally read. A reference to a number cannot be locally useful, but a reference to the *relation* between the local patch of tissue and the neighbouring regions could conceivably be significant. The larger patterns must always be carried forward in the form of detailed instructions to the component parts.” Bateson (1979)

This, mixing metaphors, is chaos in a nutshell. Detailed instructions at the local level produce complex, and from a human perspective beautiful, patterns at a higher level.

Human social behaviour has chaotic features: cities and skylines demonstrate fractal shapes; traffic behaviour demonstrates mathematical chaos; commodity market fluctuations demonstrate fractal dimensions (Sardar (1999)). The observation that human social behaviour displays features of mathematical chaos is potentially disturbing, since non-linear dynamical systems are entirely deterministic: whether our cherished human free will, if our social behaviour is mathematically chaotic? However, research suggests that *partially-deterministic* processes can produce many of the features associated with wholly-deterministic systems. Such partially deterministic processes, which could include all human social processes, could therefore be described as “Noisy Chaos” (Crutchfield (1983)).⁵²

If this mathematics reflects the nature of “reality”, then why did it take so long for anyone to notice? This, as demonstrated by Stewart’s quote which opens this section, tells us a lot about human nature. Mathematicians have been aware for centuries that most non-linear equations (i.e. curved lines) are impossible to solve, so they looked only for the exceptions – the equations which could be solved – and made them the subject of mathematics. The rest, in other words most of the natural and physical world, they ignored.⁵³ This is a kind of epistemological blindness.

Sardar puts it well:

“[P]redictability is a rare phenomenon operating only within the constraints that science has filtered out from the rich diversity of our complex world” Sardar (1999)p6

We can sometimes get away with linear assumptions in relation to pleroma, but linearity seems absent in creatura. Here are some simple experiments to prove the point. Try to think of a creature with straight lines in its shape. Better still, try to draw a perfectly straight line. Evolution does not seem to have identified any survival value in the straight line.

This in turn leads me back to the title of this section: “The Non-Elephant Supply Chain”. Stan Ulam, explaining something similar to my point thus far, stressed that most of nature is non-linear, in the same sense that most zoology is non-elephant zoology.^{54 55} We live in a non-linear world, but our science has got so used to generalising in straight lines that for most purposes all of us treat the world as if it were linear.

Here is another example. Imagine a large billiard table containing 68 balls, including the cue ball. Obviously we are not going to play normal billiards, but please bear with me, this story is going somewhere. Now, suppose we hit the cue ball in the direction of the other balls. And suppose we want to model how the other balls will move as a result of this one strike of the cue ball. The number of ways a group of entities (in this case balls) can interact is roughly equal to its factorial. So there are 68 factorial (i.e. 68 x 67 x 66 etc.) possible interactions. 68 factorial is 10^{96} . The significant point here is that a computer that could count up to 10^{96} would use up all the energy in the universe. So our current mathematics has absolutely no hope of predicting how 68 inanimate objects will interact –even in the short term. This helps to give us some perspective on our ability as a species, at this stage in our evolution, to predict the future:^{56 57} The best of our science cannot predict the behaviour of 68 inanimate objects for two seconds.

We now turn to a related topic in chaotics: *complexity*. Whilst chaos deals with surprisingly complex behaviour which emerges from the reiteration of relatively simple formulae, complexity considers what happens when a number of different entities interact. The systems whose behaviour science can predict are “rather simple, made up of relatively few distinct entities”. The other systems, the complex ones include “all living things and their parts – cells, say, or immune systems – and their assemblages – societies, economies, ecosystems and so on.” (Bradbury (1997)). Many scientists in this field define each human as a *complex adaptive system* (or more accurately a complex adaptive system of complex adaptive systems)⁵⁸. Similarly a group of interacting humans is also a complex adaptive system (a complex adaptive system of complex adaptive systems of complex adaptive systems)⁵⁹ and so is a collection of humans interacting with other things – living or non-living. And so is the entire biosphere. Therefore, whenever we are interested in human behaviour we are interested in complex adaptive systems. Our problem is that the future state of these systems cannot be predicted reliably.

Mathematicians build models which attempt to mimic the behaviour of a number of entities interacting. Typically, these models use “cellular automata”: each individual is represented by an algorithm. So we have simulations of the flocking behaviour of birds in flight, ants building nests, and so on. Some CAS⁶⁰ models allow the algorithms to be self-modifying, so that the individuals develop uniquely during the course of running the model. Such models have generated significant interest because they often develop behaviours which seem similar to those observed in the “real” world, but they also raise some interesting philosophical challenges. Put simply, the only way to find out what is going to happen in a model of a complex adaptive system is to run the model.

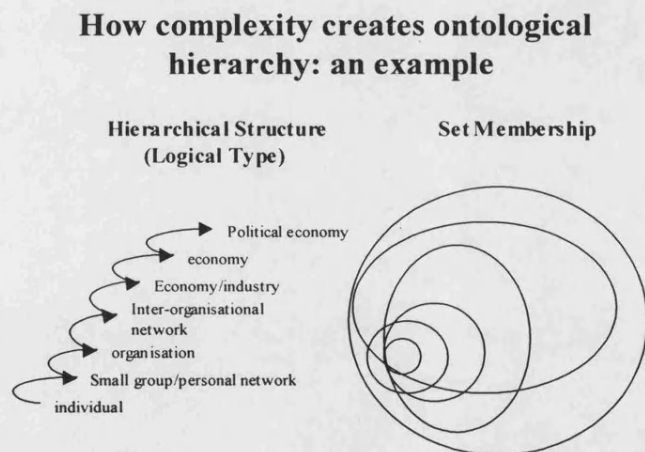
What does happen when we run the model? What happens is *emergence*. When we run a model of complex adaptive systems interacting with one another, patterns emerge. We can think in terms of emergence in chaos also, but the nature of what emerges in the two contexts is qualitatively different. In chaos, *complex* patterns emerge: that is patterns that seem far more complex than one would have expected from the simple algorithms that produced them. In complexity, *simple* patterns emerge: more simple, that is, than we might have expected from the complex interactions of relatively large numbers of entities that produced them. It is as if some kind of unexpected order has emerged from (mathematical) chaos. Cohen and Stewart (1994) have coined useful terms for these two phenomena. The emergence of complex patterns from reiterated simple formulae, they call *Simplexity*. The emergence of simple patterns from complex processes, they call *Complicity*, or the “Collapse of Chaos”. The patterns which emerge – whether from simplexity or complicity - cannot be predicted or explained at our current state of scientific knowledge.

A further important feature of complicity is that *emergence creates ontological hierarchies*:

“Emergence is the ultimate Heraclitean process. It is a generator of ontological hierarchies. It first builds these from the bottom up and then these, in turn, control the resulting articulated systems from the top down. There is a range of levels over which comparisons are often made between biological hierarchies and social ones.” Boisot and Cohen (2000) p126

This emergence of levels in complexity theory is, I believe, comparable to what Bateson (1979) , drawing on the work of Russell and Whitehead, referred to as Logical Levels, or Logical Types.⁶¹ When we combine the notions of emerging ontological hierarchies with the phenomenon of self-similarity, we reach a significant position: the fractal nature of “reality”. An example follows. Consider the nature of level of membership of social groupings as shown in the following diagram, Fig (7)

Fig (7)



This multi-level complex structure emerges “naturally”. It is not the result of some deliberate intention on the part of humans to create such a hierarchical structure, it simply happens as a result of our going about the business of being human. It is an emergent ontological hierarchy, each level being of a different “logical type”.^{62 63}

In thinking about the world of chaotics we face a philosophical problem. This is the important difference between a model of a complex adaptive system and a real one. Any “real” complex adaptive system which interests us, also involves us; we are *part of* the very system that we want to understand. Whether we like it or not, we face the challenge of trying to understand

something not from the outside as a detached observer, but from the inside whilst we participate, moment-by-moment, in the very thing which we are trying to understand. And one of the problems in finding ourselves embedded in this way, is that the process in which we are participating has no easily identified beginning or end. Events feed into each other, patterns repeat with variation, relationships form and are re-formed. It is impossible to distinguish between a cause and an effect. Natural systems tend to have a which-came-first-chicken-or-egg quality. Weather systems, for instance, start with neither the seas, nor the clouds, but cycle between them.⁶⁴ In fact, in complex non-linear dynamics, *there is no cause and effect* in the sense in which our traditional science uses these terms. Complex systems are *recursive*.

Let us consider the importance of this further. I am saying that cause and effect, as we “know” them, do not exist in complex systems. Our legitimate management discourse rests heavily on these concepts, particularly in the form of induction and deduction. Induction operates by assuming that change in a future increment of time will be consistent with observations we made in the past. Einstein recognised what a wild and potentially dangerous leap of faith this was:

“Physics constitutes a logical system of thought which is in a state of evolution, whose basis cannot be distilled, as it were, from experience by an inductive method, but can only be arrived at by free invention. The justification (truth to content) of the system rests on the verification of the derived propositions by sense experiences, whereby the relations of the latter to the former can only be comprehended intuitively.” Einstein (in Schipp (1954))

Similarly deduction. Legitimate scientific discourse deduces potential explanations in order to predict what will happen in the future. But no matter how carefully we deduce, we cannot predict the future of a complex system, let alone our creatural reality of complex systems of complex systems, all intertwined. Paraphrasing Von Neumann, you can’t understand complex systems, you just have to get used to them.⁶⁵

But the picture I am painting is a little too bleak. Things are not quite so hopeless. Whilst we cannot predict specific events in complex systems, we can recognise patterns. We might not know with any certainty what the weather will do in a week’s time, but we have got used to expecting there to be seasons.⁶⁶ Similarly, we might not know what a living organism is going to do tomorrow, but we know it will grow, develop and eventually die.

We can choose to see the glass of the human condition as enticingly half-full. In place of the assumptions of neo-Laplacian⁶⁷ determinism which we have got used to in recent centuries, emergence posits a less predictable world: a more exciting and mysterious place.

If cause and effect cannot be relied upon, what should guide our actions? Goodwin (2000) identifies the need to develop a “science of qualities”, which ties nicely to Bateson’s assertion that the living world is a world of patterns and distinctions rather than quantities. Thus, we should try to become more aware of the patterns of events as they unfold, learning about the relatedness of things without necessarily being able to explain them. Chaoticians try to do this using Phase State diagrams to produce patterns of attractors.⁶⁸

If we have to get used to the idea of trying to notice the relatedness of things, particularly living things, without being able to explain them, then, of necessity, we have to reason in a different way. We have three types of reasoning at our disposal (Boisot and Cohen (2000)):

- Reasoning by *abstraction*: treats things as if they are the same in all significant respects. This is a propositional form of reasoning
- Reasoning by *analogy*: treats things that are different as if they are the same in a number of significant respects. Analogies denote rather than connote.
- Reasoning by *metaphor* treats things that are different as if they were similar in one significant respect that is largely left implicit. Metaphors achieve their effect by connoting rather than denoting.

Abstraction is not available to us in relation to much of the creatural world⁶⁹. Whether we like it or not, we are forced to resort to analogy and metaphor in order to advance our understanding of complex living phenomena.

Our reasoning must also change in other ways. Stacey (2003) notes that non-linear and complex dynamical processes⁷⁰ are inherently *paradoxical*⁷¹. One of the most obvious paradoxes relating to models of non-linear systems is that they are entirely deterministic and yet produce novel and unexpected behaviour. A further paradox is that mathematical chaos can suggest that a process is in two different states at the same time. Much of this paradoxical nature of non-linear dynamics may be derived from its self-referential nature (Roach and Debnar (1997)). Recursiveness, it seems, produces paradox (e.g. Epimenides paradox, or Russell's paradox).

At this point we can see the potentially dramatic implications which follow a recognition that the world of creatura is non-linear. The human, social and business world becomes one in which:⁷²

- Assumptions of cause and effect need to be treated with extreme caution
- The scale, timing and nature of events often cannot be related to their antecedents
- We have to reason by pattern, analogy and metaphor rather than by cause and effect
- We have to accept, and live with, a world full of unresolvable paradoxes

Having considered the theoretical underpinnings of the non-elephant supply chain, I will now go on to look at how some of these ideas have been applied to business theory in general and supply chain theory in particular.

I will not attempt to cite all the writers who have drawn on non-linear dynamics and complexity. A useful summary can be found in Stacey (2003 pp268-292⁷³). I will, however, select some typical examples and give an overview of how this evolving branch of mathematical and scientific theory is being adopted into management theory.

Boisot and Child (1999) and Ashmos and Duchon (2000) focus on strategies of either absorbing or reducing complexity within an organisation. This clearly takes the position of the manager/CEO as external to the process and able to develop and apply objective strategies. The subject-object nature of the writing is evidenced in this typically reductionist quote:

“Information is diffused through populations of data-processing agents.” Boisot and Child (1998)

Boisot and Child do not seem to have a conception of an organisation made up of idiosyncratic, emotional and *embedded* humans.

Nonaka and Takeuchi (1995), Anderson (1999), Sanders (1998) and Lewin and Regine (2001) place the manager in a position outside the organisation and able to manipulate it in the desired direction:

“For a manager to push his or her company into chaos for a while sounds counterintuitive, even foolhardy, but it is the way to escape old attractors and find new, more suitable ones.”
Lewin and Regine, (2000) p43.⁷⁴

“Managers influence strategic behaviour by altering the fitness landscape for local agents and reconfiguring the organisational architecture within which agents adapt” Anderson (1999)

As Stacey (2003) notes, many theorists recommend that organisational leaders should mimic the cellular automata models by applying a “few simple rules” (e.g. Morgan (1997), Brown and Eisenhardt (1998) Wheatley (1999)). But emergence will take place whether the rules are simple or complex. Whether simple rules produce “better” emergence than complex rules has not been demonstrated. Human social processes are in many ways quite different from CAS models.

Allen (Undated) seems to have captured some of the implications of the theory more fully:

“There is no single optimum strategy. What emerge are structural attractors, ecologies of behaviours, beliefs and strategies, clustered in a mutually consistent way, and characterised by a mixture of competition and symbiosis. This nested hierarchy of structure is the result of evolution, and is not necessarily “optimal” in any way, because there are a multiplicity of subjectivities and intentions, fed by a web of imperfect information and diverse interpretive frameworks...”
“Evolution in human systems is therefore a continual, imperfect learning process, spurred by the difference between expectation and experience, but rarely providing enough information for a complete understanding.”

Dooley and Van de Ven (1999) make a relevant observation, using appropriately recursive language:

“To the extent to which organisational dynamics are observed to be simple and linear, organisations behave in a linear fashion because they are built that way; they are built that way because that’s the only way we know how to build things.” Dooley and Van de Ven (1999)

They go on to call for more effort in researching the inherent randomness and idiosyncrasy of organisations.⁷⁵

Stacey (2003) has developed an original theory. This rejects the applications of chaos and complexity theory to management proposed by other writers on similar grounds to those I have outlined above, which is essentially that these theories are not sufficiently radical: they do not recognise and embrace the implications of complexity, but rather attempt to integrate the new ideas into the established discourse. Stacey commends Mead’s (1934) work, which recognises mind as a socially constructed phenomenon based in language. Within this framework, the individual and the group are the singular and plural of the same phenomenon: relationship (Stacey, 2003, Elias 1939). The process of relating is one of *conversation*, whether silent or vocal, public or private. He contrasts this constructivist view with the cognitivist view, which is more centred on the individual and sees human knowing in terms of individual information processing:

“[I]ndividual mind is a silent conversation of voices and feelings, more or less hidden from others. This private, silent conversation arises in relationships between people, while being experienced in their bodies. Relationships between people are expressed in the same medium as mind, namely as conversations and feeling states. The two – relationships between people and relationships between voices in a silent conversation – are equivalent to each other. They form and are formed by each other at the same time... This does not mean that all individuals are the same because each develops unique, private fantasies around public conversation.” Stacey (2003) p331

Stacey rejects the analogue of the human individual as an agent in a complex adaptive system. A theory which positions the manager outside the complex adaptive system, as the

“programmer”, altering the conditions of the system so that novel new behaviour can arise, is flawed. If the humans in the system are agents (equivalent to cellular automata), then so is the manager, and therefore the manager cannot take a position as programmer outside the system. Having rejected this theoretical position, Stacey takes the view that:

“The analogue of agents is the themes organising conversation, communication and power relations. What is organising itself, therefore, is not individuals but the pattern of their relationships in communicational and power terms in the public vocal arena and, at the same time, the private, silent arena that is mind. The analogue of a complex adaptive system in human terms is then the self-organising process of communicating in power relations.” Stacey (2003) p332 ⁷⁶

Having seen what management theorists in general have done to try to apply chaotics to management theory, I now want to turn specifically to supply chain theory, to see what progress has been made with applications in this field. ⁷⁷

Jenner (1998) applies the principles of dissipative structures to Lean Organisations. ⁷⁸:

“Lean organisations promote “bounded chaos” at all levels as an essential tool in their efforts to assure ultimate control.”

As we have seen previously, the idea of implementing a strategy which encourages chaos in an organisation is questionable. Macbeth (2002) describes a process for developing supply chain strategy and implementing supply chain improvement through the application of complexity principles. The approach recommends three phases: conditioning, creating far-from-equilibrium conditions and managing positive and negative feedback. Macbeth therefore also positions the manager outside the organisation and able to take a positivist position in moving the organisation toward a desired state. He follows the “push the organisation toward the edge of chaos” mandate. For reasons explained earlier, this view is flawed.

Choi and Dooley (2000) apply CAS theory to supply networks. Whilst still deterministic, their theory has a lighter touch:

“Managing the entire supply network has been an elusive endeavour. We believe this is because of an incomplete understanding of supply networks.” “... it becomes important to know when to control a supply network deterministically by reducing dimensionality and through negative feedback, and when to let it emerge by increasing dimensionality and through positive feedback.. Many managerial frustrations ... stem from the inability to recognise that there are differences between these two aspects of supply network management.”

This view avoids the mistaken generalisations of some of the other theorists.

Summarising, the living world is nonlinear and therefore human behaviour is inherently nonlinear. Linear causality and inductive and deductive reasoning are of very limited use in helping us to understand social phenomena. It is more appropriate to look for pattern, metaphor and paradox. We need to develop a science of qualities to better understand what is happening in our supply chains. There is very little recognition of this situation in current supply chain theories.

Half a Brain

“To say that all human thinking is essentially of two kinds – reasoning on the one hand, and narrative, descriptive, contemplative thinking on the other – is to say only what every reader’s experience will corroborate.” William James⁷⁹

“Computers are useless: they can only give you answers.” Pablo Picasso

This section builds directly on the previous section. Here, I aim to demonstrate firstly, and uncontroversially, that the brain has non-linear characteristics and, slightly more contentiously, the related idea that mind, and perception, are chaotic phenomena⁸⁰. Secondly, I go on to consider the nature of mind, and in particular the possibilities afforded by our minds for different kinds of thinking: not only non-linear thinking but also non-logical thinking, and that non-logical thinking is no bad thing, in fact it is essential for us to think non-logically in order to function in the social world. Thirdly and finally in this section, I draw some conclusions from this thinking about thinking: In particular, I suggest that academics are limiting their thinking about business in a rather severe way, in a way that leads us to dangerously false premises, with potentially harmful results.

Firstly then, we consider the non-linear brain. In the previous section I introduced some basic ideas from chaos and complexity theory. Several writers refer to research evidence of “chaotic” patterns of neuron activity in the brain (Sardar (1999), Calvin (1997), Freeman (1999)):

“Neuron firing ... is not linear” Greenfield (2000)

“The EEG is not periodic, like the tick of a clock, but irregular, and so it looks like noise. The microscopic activity really is noise, but the macroscopic activity is chaos.”⁸¹ Freeman (1999)

The brain is not only non-linear, but also complex and recursive. The only thing that can cause a neuron to fire in the brain is one or more other neurons. So the brain is a solipsistic place:

“Linear causality fails most dramatically in studies of the relations between microscopic neurons and the macroscopic populations in which they are embedded. Each neuron acts onto a myriad of others within one to a few synaptic links, and already the returning impact of those others alters its state before it can send another impulse. This hierarchical interaction cannot be reduced to a linear causal chain. .. In each of these cases, particles making up the ensemble simultaneously create a macroscopic state and are constrained by the very state they have created.” Freeman 1999 p135

Whatever it is that is going on in the brain – and much of it is still a mystery – we can certainly observe that brain activity *self-organises*.⁸²

The brain is a complex adaptive system.⁸³ Neuron activity forms into temporal patterns, and each brain develops its own habits of forming particular patterns: over a lifetime unique connections, paths (or ruts) tend to evolve⁸⁴. “Basins of attraction” emerge at a range of levels of detail and over a range of time periods (or rather, aperiods).

As we might expect, perception also demonstrates non-linearity: sensation follows a “power law”⁸⁵ (Bak(1996)). The non-linearity of our sensations and perceptions is an essential requirement for our functioning in the creatural world. Our processes of perceiving and experiencing are essentially about patterns and distinctions rather than quantities. So our brain activity is non-linear, and our experiences and perceptions are non-linear. Our ideas can be non-linear too. A good example of a non-linear idea is a paradox. Paradox is a recurring feature of human life.

A simple example is the “liar’s paradox”. Consider the sentence below:

“This sentence is false”

Is the sentence above true, or false? If it is true, then it is false. If it is false, then it is true. This phenomenon of paradox occurs frequently in situations which are both temporal and self-referential (recursive). Grim, Mar and St Denis have mapped this paradox mathematically, demonstrating that the liar’s paradox “creates a chaotic attractor in truth space” (Grim, Mar and St Denis (1998)).⁸⁶

Consciousness is paradoxical: as Bateson observed, the outputs of our perception are consciously, and unquestioningly, received, whilst the processes of our perception are a mystery to us. Millions of photons stream onto the retina of our eyes, whilst simultaneously millions of neurons interact in non-linear complex patterns, and we “see” an “image”.

“I, the conscious I, see an unconsciously edited version of what affects my retina. I am guided in my perception by purposes... The image is consciously scanned, but only after it has been processed by the totally unconscious process of perception.” Bateson (1973) p408

We have no causal explanation for how this happens. There may be no causal explanation. Nevertheless, we behave as if this process of seeing, this chaotic, non-linear, inexplicable miracle is the most natural thing in the world, and we trust the outputs of this process, our images, completely.

Being human therefore puts us in a quandary. We are embedded in, perhaps even constituted in, paradox. We can neither observe nor explain without paradox. As Von Foerster noted, all statements, being statements by observers, are self-referential and hence laden with paradox.⁸⁷
88 89

Given the perspective I am presenting, of a complex adaptive biological “unity” (a person)⁹⁰ struggling along in a creatural world of recursiveness, dubious causality, unexpected emergence and occasional catastrophe, it is to be expected that psychologists are beginning to adopt the principles of chaotics into their work. This they are doing, and in some cases with gusto.^{91 92}

At the beginning of this section, I promised to introduce the reader to some opportunities for different ways of knowing which are generally under-used in a business context. These less well known ways of knowing have been available to us for as long as humans have existed. They are related to the differing capacities of our left and right cerebral cortices.⁹³ The left hemisphere is the home of logical inference, of fine detail in calculation and in physical movement, of temporal sequence and linear causality. It is well suited to helping us in our coping in the world of pleroma. It is good at marshalling the *detail*; it is *particularistic*. It proceeds by identifying things, breaking these things up into analysable chunks and then trying to reassemble the bits. As we have seen, only a very small proportion of the world, and practically none of the living world, is suited to this way of thinking. When we find this breaking-big-things-up-into-bits approach doesn’t work, we call it *reductionism*.

For some time there was much speculation about whether the right hemisphere was useful at all. (Smith (1984)). Now, it is being recognised that the right hemisphere has a crucial role. Its functions cover a broad list, including recognising general shapes and patterns, understanding the gist of an argument, and recognising meaning, ambiguity and paradox (only our right hemisphere, it seems, has a sense of humour). Ornstein (1998) summarises neatly: the left

hemisphere gives us *text*, the right hemisphere gives us *context*. Each, of course, requires the other, but context is perhaps of a *higher logical type*.

Our right hemisphere seems to be attuned to the relatedness of things, to patterns, to wholes rather than parts, to broader or more subtle meanings rather than literal signs, to the “big picture”. The right hemisphere is good at stories, at coping with ambiguity. Moreover, the right side reasons in a different way: *by metaphor* rather than by literal causality.⁹⁴

Bateson illustrates this by contrasting a traditional, left-hemisphere logical syllogism, with a right-hemisphere syllogism. The left hemisphere version is the Syllogism in Barbara:

Men die;
Socrates is a man;
Socrates will die.

His right-hemisphere syllogism, which he calls the Syllogism in Grass, is as follows:

Grass dies;
Men die;
Men are grass.

The metaphor is direct: men are grass. Bateson notes that “left brain material can be qualified by “perhaps”, “as if”, etc.”, whereas right brain material lacks tense, negatives, or other qualifiers.⁹⁵ Such metaphorical thinking is the stuff of all art. If we consider the syllogism in grass as a poem, then it becomes legitimate rather than nonsensical.⁹⁶ There is a wider observation to be made:

“To try to fight all syllogisms in grass would be silly because these syllogisms are the very stuff of which natural history is made. When we look for regularities in the biological world, we meet them all the time...poetry, art, dream, humour, and religion [show] a preference for syllogisms in grass.”⁹⁷
Bateson ((1979) Chapter 2), and

“Mere purposive rationality unaided by such phenomena as art, religion, dream and the like, is necessarily pathogenic and destructive of life... its virulence springs from the circumstance that life depends on interlocking circuits of contingency... while consciousness can only see such short arcs of such circuits as human purpose may direct”

“...Art, as suggested above, has a positive function in maintaining what I call wisdom, i.e. in correcting a too purposive view of life and making the view more systemic.”
Bateson (1973) pp146-147

Bruner reaches similar conclusions:

“The elegant rationality of science and the metaphoric non-rationality of art operate with deeply different grammars, perhaps they even represent a profound complementarity. For in the experience of art, we connect by a grammar of metaphor, one that defies the rational methods of the linguist and the psychologist.” Bruner (1979) p74

Ornstein (1998) develops the notion of complementarity further:

“The two sides handle the world differently, one focusing on the small elements of a worldview and linking them together so that they can be acted upon, produced, reproduced, like a formula. The other links together the large strokes of a life’s portrait, where we are, where the parts fit, the context of our life. As a result, there is evidence that there is a special role for the right hemisphere in developing the overall meaning of many of life’s situations: the large view, or a higher organisation of events... Perhaps this more organised pattern-perception is one meaning in this context of being wise” Ornstein (1997) p162/3⁹⁸

It is only through the integration of both hemispheres that we can fully appreciate detail and context combined together, recognising the subtleties of human experience:

Labour is blossoming or dancing where
 The body is not bruised to pleasure soul.
 Nor beauty born out of its own despair,
 Nor blear-eyed wisdom out of midnight oil.
 O chestnut-tree, great-rooted blossomer,
 Are you the leaf, the blossom or the bole?
 O body swayed to music, O brightening glance,
 How can we know the dancer from the dance?
 W B Yeats⁹⁹ (1926)

At this point, we have noted that our prevailing culture and way of knowing emphasises the logical and the linear: We are intensely interested in detail, in causes and effects, in inputs and outputs. We worry about efficiency, and about quantity. More is better; getting more for less is better still. In this way of knowing, causality is king. Everything has a cause and an effect, and the task is to discover what these “forces and impacts” are and, once discovered, to apply these discoveries in order to squeeze more “value” (that weasel-word again) from our natural world. Our culture has emphasised and heightened our capabilities for linear thinking. But on its own this way of thinking is less than fully human and highly dangerous:

“Conscious man, as a changer of his environment, is now fully able to wreck himself and that environment – with the very best of conscious intentions” Bateson (1973) p452

In contrast, we have observed also some of the non-linear characteristics which are inherent within our human brains and minds. These aspects of our minds are more in keeping with “how nature thinks”. In the creatural world, events co-evolve and emerge, causality is impossible to identify except in retrospect, and detailed prediction is impossible. Essential to our coping in this creatural world, are the full range of our human capabilities: our “occult” capabilities. These are our aesthetic senses, our ability to discern patterns and relationships and to draw distinctions, to sense the mood in a group of people, to track the unspoken subtleties in a conversation, to feel-with and feel-for others. Our culture encourages us to see our environment as a problem or puzzle to be solved, but our minds are capable of much more than this.

I shall now consider whether management theory has addressed these more fully-human ways of knowing. Are these ideas embraced by the theory, or ignored, or on the fringes? Space dictates that the review must be cursory. What I am asking is “does the theory recognise the extremely limited nature of causality in business?” and “does the theory recognise the appropriateness of non-linear thinking, thinking which goes beyond the merely rational, which is aesthetic and intuitive?”

Some of the most influential management gurus have little to say on this topic. Porter, one of the most revered strategy theorists, is a strong proponent of ideas which I have challenged in this chapter. His analyses are entrenched in the orthodox discourse of strategic choice. One of Porter’s most influential theories, his “Five Forces” model of competitive strategy, rests on a Newtonian conception of the business world. I am not saying that Porter’s suggestions are incorrect, rather that they are dangerously incomplete. He has written several good books for the left hemisphere, and if the human race had only left hemispheres then he would have done rather a good job.¹⁰⁰

Left-hemisphere dominant thinking has a strong grip on management orthodoxy. From FW Taylor’s “one best way” of shovelling, to Mike Hammer’s Business Process Reengineering, the search for the most efficient way of doing things continues. Our definitions of management are

still circumscribed by the linear sequences of Fayol and Drucker: Objective setting and planning, organising, motivating, coordinating and controlling.

These sequences are not seen as recursive or paradoxical. Management by Objectives remains embedded into the rituals of large organisations.

Some management research dares to suggest that that our prevailing theories bear little relationship to what managers really do. Mintzberg (1973) and Kotter (1982) exploded the myth of the manager as rationally steering the organisation toward predetermined goals, replacing this picture with one of a chaotic and fragmented practice, characterised by complex patterns of relationship and intuitive action.

Some thinkers seem caught between the orthodox and heretical camps. Senge (1990), recognises the need to go beyond the rational, but offers models which are cybernetic.

Outside orthodox theory live a few heretics. Their influence varies greatly. Some have infiltrated the mainstream whilst others have struggled to reach an audience. A prophet largely ignored in his own country is Revans. Revans distilled his experiences of working with Einstein and Rutherford into a management development method called Action Learning. The core of this approach was to bring together managers facing difficulties into a mutually supportive group, who would each challenge each others thinking and ask insightful questions. We can see in this perspective a firm belief in the embeddedness of management action, and that management action only has meaning in *context*. This philosophy was captured by Revans as $L=P+Q$, Learning = Programmed knowledge plus insightful Questioning:

“Programmed knowledge, already set out in books or known to experts is quite insufficient for keeping on top of a world like ours today, racked by change of every kind” Revans (1983 p102)

This integration of context and insight with rational analysis, is precisely what we are looking for in a theory which goes beyond a left-hemisphere-dominant approach. The combination of P and Q exceeds the narrowly rational, whilst the positioning of this wrestling with real problems within a group of comrades in adversity recognises the socially constructed nature of the inquiry.¹⁰¹

Argyris and Schon (1978) introduced ideas which go beyond narrow rationality in their theories of Model I and Model II learning. Of note are their recognition of the recursive nature of business learning, combined with some application of levels or logical types and unconscious processes.¹⁰² More radical than Argyris and Schon are Fisher, Rooke and Torbert (2001). They suggest a range of personal developmental stages in organisational life, and for some of the rarer, latter stages, they offer revealing names such as Magician and Ironist. They describe the transformation to this stage from earlier stages as follows:

“[T]he transformation is from being in the right frame of mind... to having a reframing spirit. A reframing spirit continually overcomes itself, divesting itself of its own presuppositions. A reframing spirit continually re-attunes itself to the frames of reference held by other actors in a situation, and to the underlying organisational and historical developmental rhythms...” Fisher et al (2001)p177

Here we have a whole-brain perspective. The Magician/Ironist is open to paradox and unpredictability, holding ideas lightly and willing to let go of them if required by the ever-changing social context.

Reason (1994b) has also suggested perspectives which go beyond a narrowly rational view of management theory. He describes *critical subjectivity* as follows:

“Critical subjectivity means that we do not suppress our primary subjective experience, that we accept our knowing is from a perspective; it also means that we are *aware of* that perspective, and of its bias, and that we articulate it in our communications.” Reason (1994)

Reason (1994a) suggests four “ways of knowing”: experiential presentational, prepositional, and practical. Reason and Torbert (2001) suggest three dimensions of inquiry: first, second and third-person. Reason and Goodwin (1999) suggest a path toward a science of qualities. Each of these approaches searches for a more encompassing inquiry, taking us beyond Newtonian orthodoxy.

Stacey (2003) also takes a radical stance.¹⁰³ Drawing on ideas from non-linear dynamics, complexity and group psychotherapy, he suggests we should focus attention on the quality of participation, the quality of conversational life, how anxiety is lived with, and coping with paradox and unpredictability. The new qualities of attention which he proposes, are not available, I suggest, from our rational left hemispheres alone. Such attention calls for the full support of our aesthetic, intuitive, metaphorical, integrated mind.

What about supply chain theory? Are the theorists in this camp from the orthodox school?

Most supply chain literature seems to focus on the pursuit of linear causality. Cox (1997,2003) for example, makes no mention of aesthetic or ironic perspectives, Lamming (1993,1995,2001) draws theories on innovation into the supply chain literature but the work is based on a relatively conventional view of causality: Lean Supply does not seem to be populated with ironists or characterised by paradox. Hines (1994,2000) is very much from the orthodox school, proposing a bricolage of recipes and prescriptions.¹⁰⁴

An ironic note does occasionally surface in academic papers. For example, Jones ((Information in the Supply Chain) in Cox and Hines (1997)), quotes a senior manager:

“The whole partnership message is utterly devalued and corrupt out there. It’s a joke because all of the suppliers have experienced that what this is really about is the latest good technique for screwing down the supplier.”

This manager acknowledges that the superficially legitimate conversations which were taking place about partnership in his organisation were ironic.

In this section we have seen that our current supply chain theories are left-hemisphere dominant, focusing on causality and particularism. In order to be adequate to a wider understanding of human nature we need to introduce the potential for wisdom and qualitative thinking offered by our wider mind. Further, such integration of mind can itself be seen as a metaphor for the wider integration needed for a more participative world.

Summary: Some Magnificent Academic Trusels

“A peculiar sociological phenomenon has arisen in the last one hundred years which perhaps threatens to isolate conscious purpose from many corrective processes which might come out of less conscious parts of the mind. The social scene is nowadays characterised by the existence of a large number of self-maximising entities which, in law, have something like the status of persons – trusts, companies, political parties, unions, commercial and financial agencies, nations and the like. In biological fact, these entities are precisely *not* persons and are not even aggregates of whole persons. They are aggregates of *parts* of persons. When Mr Smith enters the boardroom of his company, he is expected to limit his thinking narrowly to the specific purposes of the company or to those of that part of the company which he “represents”. Mercifully, it is not entirely possible for him to do this and some company decisions are influenced by decisions which come from wider and wiser parts of the mind. But ideally, Mr Smith is expected to act as a pure uncorrected consciousness – *a dehumanised creature.*” Bateson (1973) p421

Some of the most influential ideas in management thinking are *Magnificent Academic Trusels*:

“A Trusel is an idea or a finding that is widely perceived to be true, but which is largely useless (or even of negative value). The idea that a truth may lack value may be disturbing, but it is true, although it is not a trusel.” Warfield (1992)

A Magnificent Academic Trusel is therefore:

“[A Trusel] that has been widely acknowledged for its intellectual content (explicitly or implicitly), but without a corresponding amount of attention being given to its utility or even to its potential negative value for society.” Warfield (op cit)

In this chapter I have challenged some of the body of knowledge in supply chain theory. I have done this not entirely by challenging supply chain theory itself, which is in its infancy and relatively lacking in content, but by also questioning the wider assumptions and philosophies that underpin it. I now suggest that the existing body of knowledge in supply chain contains a number of Magnificent Academic Trusels. These are listed below:

The Magnificent Academic Trusels of Economics

- It is in the nature of humans to act selfishly in pursuit of the acquisition of goods. Selflessness and generosity are either abhorrent or rare special cases, which can be ignored.
- Everyone should act selfishly, because if they do so, then an invisible hand operates (called “the market”) which ensures that this turns out to be in everyone’s best interests.
- The proper focus for economics is the exchange of physical goods. The exchange of non-physical things such as knowledge, ideas, experiences and judgements can be either ignored completely, or treated as if it were an exchange of physical goods.
- Aesthetic or imaginative creativity is to be treated as “out of scope”. Instead, we should talk of entrepreneurship, which is the art of acting selfishly with flair.
- The goal of economics is growth, by which we mean that the total amount of wealth in a country or society. Wealth is defined as the ability to own a larger quantity of physical goods. This is to be measured in terms of the average growth: Individual hardship at the lower end of the scale is a price that has to be paid in order to increase the total figure. Total wealth in a country/society should increase every year, and *the rate of increase should also increase.*

Warfield has defined a Magnificent Academic Trusel as something which is widely perceived to be true, but which could have negative social consequences. Clearly, the assumptions listed above have potentially serious consequences. In our culture, we tacitly accept these myths and, through the double hermeneutic, we behave in a way that legitimises and reinforces them. By creating a theory inhabited (using Bateson’s words) by dehumanised creatures, our behaviour accelerates towards that of a dehumanised society.

The Magnificent Academic Trusel of Management

- Through a rigorous and rational process of planning, organising, motivating, coordinating and controlling, a manager can ensure that his/her business is successful and profitable.

Most managers would find this statement acceptable and broadly “true”. This ancient formula gets regularly dressed up in new clothes or spun in a new direction. For instance, it may be suggested that competitive pressures call for a focus on “core competencies” or that a need for agility mandates the creation of a “virtual organisation”. These suggestions are snapped up by managers who are desperate to find a way of overcoming unpredictability. Unfortunately, as we have seen in some detail in this chapter this view is questionable. If our businesses are biological and social phenomena, then the relationship between events will be non-linear, and causality of the type typically built into the planning and coordinating processes of companies may not apply. Decades ago, Kirzner called this the “fog of uncertainty”.¹⁰⁵

Further, the Trusel misses the emotionally charged nature of organisational life. Organisations can be conceived as webs of conversations and relationships, through which people continuously create and recreate their own shared reality. This will rarely accord with the “strategic plan” (Bate (1994), Frost et al.(1991)). Managers themselves are embedded in this web. Our social awareness can never be an entirely conscious awareness, and hence our participation can never be entirely rational in the sense of orthodox management theory.

Not only does the Trusel describe a dehumanised business world, it also describes a business world devoid of novelty and creativity. A purely rational business world is a *world without wisdom*.

Has sufficient consideration been given to the potentially negative effects of this Trusel on society? Well, perversely, perhaps managers take psychological comfort from the orthodox view of them as masters of their own destiny. Yet this same premiss dehumanises our business world. The business world of our prevailing theory is, as we have seen in this chapter, an *unnatural world*.

The Magnificent Academic Trusel of Supply Chain Theory

- Through a rigorous and rational process of planning, organising, motivating, coordinating and controlling, applied not only to his/her own company, but also across boundaries with customers and suppliers, a manager can ensure that his/her business is successful and profitable.

The Management Theory Trusel translates directly into the Supply Chain Theory Trusel. Newtonian metaphors are applied, inappropriately, to complex biological and social phenomena. Creativity, being partially intuitive and unconscious, merits scant consideration, since the orthodox supply chain world is a consciously rational world. Even some of the more radical supply chain theories, such as Lean Supply, still operate from the perspective of Homo Oeconomicus. The same potentially negative social consequences therefore apply.

Taking stock

We should now pause to bring some of these ideas together before moving on to the next chapter.

I have suggested that our current theories of supply chains are constructs which are influenced by flawed beliefs about human nature, seeing humans as selfish, “rational fools”. I have proposed that it would be beneficial to consider “supply chains” as living phenomena – as webs of conversations rather than physical flows of goods and information. Further, I have observed that supply chains are non-linear phenomena and that this characteristic has important

implications: the nature of causality in such non-linear webs is not the causality of our orthodox theories. Rather, causality – if the term has any meaning at all in a non-linear context - is qualitative, metaphorical and inherently unpredictable. Understanding, or merely coping, in such a context requires different, possibly heretical “ways of knowing”.

The flaws – or errors of logical typing – in our orthodox theories are non-trivial. They lead us toward actions that have potentially serious consequences for the human species, as will be described further in the next chapter. In the next chapter, we will consider how different ways of knowing might help us in researching supply chains from this heretical perspective.

Endnotes

¹ Abbot, E (1884) *Flatland: A Romance in many Dimensions*

² Edgeworth himself challenged this view in the work cited, but it is nevertheless still the conventional view in economics.

³ I am not claiming, of course, that greed is a recent social phenomenon. Individuals have accumulated wealth – by fair means or foul – since prehistory. The modern perversion is the presupposition that greed operates for the greater good, through the “invisible hand”.

⁴ Schlegel (1998) is a good example

⁵ Boulding, K E (1971b)

⁶ From this perspective, the “economic” element of “rational, economic” man, is a subset of the (tacitly and boundedly) “rational”.

⁷ A rare alternative to the growth-addicted economic model is demonstrated by the small country of Bhutan in the Himalayas. Their policy is to “give priority to Gross National Happiness rather than Gross National Product”. This informs and guides national policy in relation to self-reliance, human development, cultural preservation and environmental preservation. The policy has been evolving

over several decades and so far seems to have been successful. Full details on the country’s web site.

⁸ This is a good example of an idea from classical mechanics being shoe-horned into a social theory. Thus, confusion of levels within this dialectic can become recursive, leading to a hermeneutic double-bind.

⁹ This is the core of the argument for Lean Supply

¹⁰ Interestingly, they recommend that this should be done not through punishing individual selfish behaviour, but by punishing the failure to impose group social norms. In other words, they recommend that the intervention must be at a higher level of logical type

¹¹ Recently, the Kingsmill Enquiry in the UK set out to investigate how “Human Capital” should be captured and measured in a company’s Annual Report. The “science” of economics currently has very little to offer this endeavour.

¹² Schumpeter’s efforts in this area are the most notable, but even he makes little progress, as explained later.

¹³ Thomas Carlyle’s famous description of economics.

¹⁴ Recent research into applications of complexity theory in economics offers some hope. Some more interesting insights into how economies operate have recently surfaced from the field of non-linear dynamics and chaos “theory”. The findings are tentative and experimental, but no more so than anything the classical theory has managed to come up with in the last two centuries. It is worth giving just a couple of examples of how the more enlightened – and therefore heretical – economists are redefining the field using these new ideas.

Mandelbrot’s (1982) discovery that global cotton price trends followed the same pattern over both daily and monthly timescales across a period of sixty years cannot be explained from the perspective of classical economics. However, if one considers the economy as a biological system, then tentative explanations are possible, from the field of non-linear dynamics. And of course an economy is a biological system.

Baumol and Benhabib (1989) explain a related phenomenon –mathematical chaos - in an economic system as follows:

“Imagine a bargaining model in which each party has been instructed ... to respond to each new offer [using] a simple reaction function provided in advance... If the perfectly deterministic sequence of offers and counter –offers that must emerge from these simple rules were to begin to oscillate wildly and apparently at random, the negotiations could easily break down... Yet all that may be involved is the phenomenon known as chaos, a case that is emphatically not pathological, but in which a dynamic mechanism that is simple and deterministic yields a time path so complicated that it will pass most standard tests of randomness.”

If the consequences of a “rational”, acquisitive, greedy but predictable humanity suggest mathematical chaos, then the features of an economy populated by individuals who are – paradoxically – both generous and greedy, reciprocal and acquisitive, kind yet cruel, must be beyond the limits of our current theories.

What this brief mention of new directions in economics research illustrates is the possibility that economic phenomena are emergent in non-linear dynamical systems. As such, their outcomes are unpredictable in detail, although patterns of outcomes might be anticipated.

(We will revisit the topic of non-linear dynamics later in the thesis)

¹⁵ Elsewhere in this Thesis, I show that “value” is a troublesome concept. These arguments are relevant to this section, but not repeated here.

¹⁶ “Give me a lever long enough and a fulcrum on which to place it, and I shall move the world.” Archimedes

¹⁷ Anthropomorphism again – surely the people in organisations are forming the alliances rather than the companies?

¹⁸ That difficult and ambiguous word “value” again. .

¹⁹ It is worth noting – in passing – that neoclassical economics is poorly equipped for the task of taking a “value stream” as its level of analysis. The economic argument in support of the Lean Supply theory therefore draws on Transaction Cost Economics (which is not entirely up to the job either).

²⁰ More usually termed value streams in lean terminology

²¹ Lean Supply does not try to claim that every individual in the Supply Chain will be better off under a Lean paradigm, but it does claim that the cooperating firms will be better off. But of course the firms are simply social constructs; firms don’t have rent to pay and mouths to feed – people do. Whatever the espoused goals and strategies of the firms, individuals cooperating within a neoclassical economic model would apply a maximisation algorithm and a single preference ordering. From my own heretical epistemology, I suggest that this would probably result (with repetition and large numbers) in mathematical chaos rather than universal happiness.

²² Mandville, *Fable of the Bees*, 1714

²³ Kant (1781)

²⁴ Jung (1916) *Septem Sermones ad Mortuos* (Seven Sermons for the Dead): Jung was apparently going through some sort of mental breakdown when he wrote it. The terms *Creatura* and *Pleroma* are ancient terms which Jung had borrowed from Gnostic writings.

²⁵ Bateson’s use of the term *Pleroma* is – typically - highly idiosyncratic. In Christian Theology, *Pleroma* has a very different meaning: for example Teilhard De Chardin uses the term to represent the “final state of the world”, the “consummation of all things in Christ” (De Chardin, 1960, p122). Bateson was an atheist, at least for most of his life, and may not have been aware of the Christian interpretation.

²⁶ In using these terms, one should avoid association with the dualism of Descartes or the Chains of Being of Aristotle or Locke. The categories of *pleroma* and *creatura* are applied from a monistic perspective. Hence, whilst physical objects without life are of the world of *pleroma*, and living creatures are of the world of *creatura*: “there can be no *creatura* without *pleroma*”.

²⁷ Korzybski (1933, 1950)

²⁸ Logical Types will be explained later in the Thesis, so please bear with me...

²⁹ Bateson (1979)

³⁰ Schumacher (1978) drawing on Plotinus, St Augustine and Thomas Aquinas (amongst others).

³¹ I am tempted to add supply chain (HNP)

³² Whenever I cite ideas from psychology, I feel obliged to point out that I am not stating a positivist truth, merely a tentative theory. Confusing maps with territory is both particularly tempting and dangerous in this field

³³ Heraclitus (c500BC) said that we can never step into the same stream twice, since "all is flux" (hence my little pun)

³⁴ See, for instance, Stacey (2003), Harrison (1995)

³⁵ This is based on the ancient Greek concept of the Daimon, see Rollo May's existential writings, e.g. May, R (1991) *The Cry for Myth*

³⁶ Brown (2000) Koestler (1967) plus Milgram (1963)

³⁷ Although attempts to understand group behaviour started well before Freud, our understanding of group behaviour is limited. Key works include Bion (1967), Foulkes and Anthony (1961) and more recently Stacey (2003).

³⁸ i.e. we find ourselves "in the thick" of situations. "Thrown in at the deep end", as it were.

³⁹ My awareness of conversations as central to business life was initially thanks to Robert Bolton (Bolton(1998)) Goss (1996) and, though a dodgy character, Werner Erhardt's writing, then via Stacey (2003) and Shotter (1993)

⁴⁰ Toni Morrison, from a Nobel Prize address: *Miami Herald*, December 12, 1993 p5.

⁴¹ I could have approached this theme from other directions; for example from a Psychological or Psychoanalytic perspective. I chose a biological perspective for two reasons: brevity and novelty.

⁴² They do not, as Durkheim pointed out: "A contract is not self-sufficient but supposes a regulation which is as extensive and complicated as life itself... A contract is only a truce, and very precarious, it suspends hostilities only for a time" Durkheim (1933)

⁴³ My subjective impression is that RAP never really fulfilled its promise in terms of its application in the business world. When we consider the broader context of our societies, this may not be surprising: more on this later in the Thesis.

⁴⁴ Anderla, G, Dunning, A and Forge, S (1997)

⁴⁵ Lotka (1925) (Elements of Physical Biology) through Cybernetics (c1946), General Systems Theory (1950), Systems Dynamics (1956), and to Waddington ((1977) *Tools for Thought*). Gregory Bateson wrote extensively on Complexity Theory from the 1940's to the 1980's without realising it. Various "branches" which have developed along side this main trunk of theory include Cellular Automata/Complex Adaptive Systems (1950); Fractal Geometry (1975); Schismogenesis (1920); Autopoiesis and General Evolutionary Theory (1985); and Mathematical and Theoretical Biology (1925). For more details and bibliographical data on all this list see Abraham (1995). Ironically, Descartes – oft maligned as complexity's nemesis – speculated in Part Five of *Discourse* regarding the possibility that the dynamics of a system could, over time, tend to make it more orderly. (See notebooks of Shalizi at Santa Fe: www.santafe.edu/~shalizi/notebooks)

⁴⁶ See Kellert (1992) on whether "Chaos" qualifies as a "theory".

⁴⁷ The term "Chaos" Theory is a misnomer. In normal usage, the term chaos refers to completely random behaviour. The Chaos of Chaos "Theory" is not random at all. On the contrary, it is behaviour which is following precisely a set of mathematical rules: It is deterministic behaviour. Unfortunately, we are stuck with the term Chaos and all the confusion it brings: Just like "Supply Chain". One set of theorists have coined the term "chaordic" as an alternative, referring to phenomena that appear to be both chaotic and orderly at the same time (Hock (2000)).

⁴⁸ The only exceptions seem to be straight-line equations.

⁴⁹ Phase Space is a useful mathematical concept with wide applications. Where a behaviour which is of interest can be (partially) represented by a number of different equations, then each equation is represented by a dimension in an imaginary space: Phase Space. The behaviour can then be plotted in these multiple dimensions and represented by this pattern in phase space. Phase Space will be referred to later in the thesis in more detail.

⁵⁰ These discoveries required no new mathematics. They simply required the patience to iterate the equations long enough for the interesting behaviour to appear.

⁵¹ I have not explained the butterfly effect, as most people have heard of it. But for reference it is in Lorenz (1963). The more technical term is "Sensitive Dependence on Initial Conditions"

⁵² This is a particularly important argument in this thesis, since I depend on this position in order to apply concepts from complex Adaptive Systems theory to human phenomena.

⁵³ In fact, many of the alleged solutions to the supposedly solve-able equations are actually wrong also: see Stewart (1997)

⁵⁴ Gleick (1998) p68. I apologise for this over-used quote. I shamelessly used it in order to get a snazzy title for the section.

Gleick references the quote to Ulam and to "Experimental Mathematics" p374 (no year). I have been unable to trace the quote to source and wonder if it is apocryphal.

⁵⁵ Elephants, of course, are just as non-linear as the rest of nature!

⁵⁶ This example is from Bradbury (1997) with some embellishment from me.

⁵⁷ Newton's laws do not even help us to predict what should happen if the cue ball hits two balls at the same time (Stewart 1997)

⁵⁸ Stacey (2003) avoids reference to Complex Adaptive Systems, introducing instead his own theory of Complex Responsive Processes. More on this later.

⁵⁹ This recursive, multi-layered, multi-level, self-similar nature of creatura is, I believe, non-trivial. I shall return to this point later.

⁶⁰ Complex adaptive systems

⁶¹ And – by analogy – other ontological hierarchies such as that in Schumacher (1978)

⁶² When I first wrote this section, I hesitated to put this information in, thinking it rather weird. But then I found out that it was already scientifically respectable. It seems that this recognition of the fractal nature of human existence has been written about in several journal articles, mostly in the field of anthropology. Related references are introduced in later chapters. There is even a name for the science of applying complexity theory to social phenomenon: Erodynamics.

⁶³ A potential weakness of this example is that it describes a hierarchy of constructs. This makes it compatible with Russell and Whitehead's original work in logic, but less directly representative of the biological world. It is also clear that the phenomena may be a reflection of the nature of human consciousness rather than the ding an sich.

⁶⁴ The weather system is, of course, creatural. Plants and animals shape it and are shaped by it.

⁶⁵ The original comment was in relation to mathematics.

⁶⁶ In a fairly vague way, we think we know what "causes" the seasons (Earth's distance from the Sun, etc.)

⁶⁷ It is de rigueur to have a dig at Laplace when discussing determinism, but rather unfair. Laplace knew that the "Vast Intellect" to which he referred, which might know the state of everything in the universe, was an entertaining and amusing novelty rather than a practical possibility.

⁶⁸ Actually, perhaps we do have a science of qualities, only we call it Art. We have not been in the habit, at least in the last few hundred years in the UK, of using art to guide our everyday actions. The world of action has been the legitimate domain of linear, lineal and quantitative science.

⁶⁹ For example, even with the success of the Human Genome project(s), we cannot explain human epigenesis.

⁷⁰ Stacey talks of complex responsive processes, rather than complex adaptive systems. This altered terminology is key to his particular theoretical approach. So far in this section I have used the terms system and process interchangeably. I will return to this issue when we consider Stacey's ideas further later in the Thesis.

⁷¹ Paradox has several related meanings and is an important term in philosophy. In general parlance, it is often used to refer to interesting apparent contradictions. In rhetoric, it designates a trope presenting an opposition between two accepted theses. In logic, a paradox represents contradictory propositions each of which seem incontestable but which together are incompatible. See Poole and Van de Ven (1989) for a good summary. Here I am particularly interested in the class of paradox known as Logical Paradox. Whilst some paradoxes appear to be puzzles that can be (at least temporarily) solved, our interest here lies in the type of paradox which can only be “endlessly rearranged” (Stacey (2003)).

⁷² There are two further elements of theory which we should be noted. The first of these is Dissipative Structures (Prigogine (1986)). What these Structures are alleged to dissipate is energy, or heat. Prigogine refers to Newton’s second law. The fact that they dissipate energy is not particularly interesting, but the fact that they adopt new structures is of note. When pushed “far from equilibrium”, certain systems seem to self-organise into interesting new patterns: this happens, for instance, when heat is applied to certain liquids. This observation may well be significant. It is certainly the area in this field which is most heavily referenced in the social sciences. Management Theorists have extracted from this work the metaphor of the “edge of chaos”: a region where the process has to be pushed before it self-organises into a new structure. I believe that this idea may be receiving more attention that it deserves in the social sciences in comparison to some of the ideas introduced above. Many of the implications derived by social scientists from the theory of dissipative structures may be faulty and potentially dangerous. Winfree (1987), for example, has disputed the scientific findings, whilst Anderson and Stein (1987) are clear:

“Is there a theory of dissipative structures... explaining the existence of new, stable properties and entities in such systems? Contrary to statements in a number of books and articles in this field, we believe that there is no such theory and it even may be that there are no such structures.”

Anderson and Stein, p447 (Anderson – like Prigogine – has a Nobel Prize).

It is important to note that we really do not need a theory of dissipative structures in order to have a theory of the unexpected formation of new patterns and structures. The main body of work on non-linear processes includes a wide range of examples of such new pattern formation. In mainstream non-linear dynamics it is called emergence. Emergence does not depend on the application of excessive energy to push the process into a new pattern.

The application of the “edge of chaos” metaphor to management theory may be philosophically flawed. Strange attractors are typically fractal objects (See, for example, Ballazzini (2001) and Capra (1996)). Since strange attractors are fractal, there can be no such thing as an “edge of chaos” on a fractal object: Fractals do not have “edges”. For example, take Mandelbrot’s famous case: The fractal coastline of Britain. Where would one need to be, to be on the edge of the coastline? The edge of the coastline is in a different place depending on whether one is standing on Brighton beach or sailing the Atlantic. In fact, at an infinitesimal level of detail, the coastline is impossible to locate. So, I suggest, is the “edge of chaos”. Edges are Euclidian, whilst Chaotics is non-Euclidian. Another example of the dubious value of the “edge of chaos” concept can be illustrated without reference specifically to fractals. This is the “Wada Property”. The “Wada Property (Kennedy and Yorke (1991)) refers to cases where there are three basins of attractions so convoluted that every point on a basin boundary is also on the boundary of all other basins. Hence, there would be no single “edge of chaos”. See also McWhinney’s (1990) paper “Fractals cast no shadows”.

The other related theory is Per Bak’s “Self-Organising Criticality” (Bak (1996)). Bak observed that whilst catastrophic events in nature may be unpredictable in detail, their distribution over time can be observed historically to follow a mathematical pattern (The Power Law) showing a trend on a log-log scale. Complex systems tend to self-organise (and re-organise) over time. Again, we find that we can interpret history and predict potential patterns, but we are powerless to pin down specific predictions about future events. As Kierkegaard said: “Life is understood backwards, but must be lived forwards”.

⁷³ I have avoided repeating many of the examples of theoretical applications of Chaotics cited in Stacey (2003) Readers can refer to these directly.

⁷⁴ I have previously mentioned my distaste for this “edge of chaos” metaphor as applied to the social sciences in general. I would like to return here to the inappropriate application of this metaphor to management theory in particular. One way of looking at the lazy fallacy of the metaphor is to consider the perspective offered by the linguistics of Ferdinand de Saussure. Saussure used the terms Synchronic and Diachronic. Synchronic is a term which refers to a system as it appears at a single point of time, whereas diachronic applies a broader time perspective, or context. Using this terminology, it is clear that what may be conceived as an edge of chaos synchronically may not be perceived so diachronically, and vice versa. Since we can only observe an alleged edge of chaos as an embedded participant, it is impossible to adopt a diachronic perspective (except in hindsight, of course). We should also avoid a further confusion of metaphors by remembering that the “edge of chaos” referred to by these writers is by definition an edge of mathematical chaos, and not an edge of rhetorical chaos. “Edge of chaos” sounds exciting if we mistakenly think that it means the edge of utter unpredictability and misrule. It means exactly the opposite of this, however. It means “the edge of a deterministic pattern which appears random but is not”. No manager has either the knowledge or the ability to push their organisation toward such an “edge”. I therefore suggest that the “edge of chaos” metaphor would be a very useful concept in management theory, were it not for the inappropriate and mistaken use of the words “edge” and “chaos”.

⁷⁵ Mendenhall, Macomber and Cutright (2000) have identified some remarkable insights from the work of Mary Parker Follett in the early twentieth century. A selection of relevant quotations follow, which whilst preceding the later development of chaos and complexity theory, highlight a deeper understanding than some of the more superficial recent work, helping us to relate complexity theory to the nature of our social existence:

“In the behaviour-process, subject and object are equally important and reality is in the relating of these, is in the endless evolving of these relatings” Follett, (1951) p55

“The most fundamental thought about all this is that a reaction is always a reaction to a relating. I never react to you but to you-plus-me: or to be more accurate, it is I-plus-you reacting to you-plus-me... that is, in the very process of meeting, by the very process of meeting, we both become something different. It begins even before we meet, in the anticipation of meeting.. It is I plus the interweaving-between-you-and-me meeting you plus the interweaving-between-you-and-me, etc. If we were doing it mathematically we should work it out to the nth power.” Follett (1951) pp62-63

Follett maintained (similarly to Bateson) that difference is the most essential feature of life:

“We cannot rest in the common. The surge of life sweeps through the given similarity, the common ground, and breaks it up into a thousand differences. This tumultuous, irresistible flow of life is our existence: the unity, the common, is but for an instant, it flows on to new differings which adjust themselves anew in fuller, more varied, richer synthesis. The moment when similarity achieves itself as a composite of working, seething forces, it throws out its myriad new differings. The torrent flows into a pool, works, ferments, and then rushes forth until all is again gathered into the new pool of its own unifying.. Social progress is to be sure coadapting, but coadapting means always that the fresh unity becomes the pole of a fresh difference leading again to new unities which lead to broader and broader fields of activity” Follett (1920) p35

These words, written decades before complexity emerged as a scientific discipline, capture quite beautifully the implications of non-linear dynamics to the study of human behaviour.

⁷⁶ This approach offers greater integrity than some of the other theories. A subjective and personal impression, however, is that it does not capture fully the embodied and visceral nature of human interactions. The “conversational themes” can seem strangely disembodied, almost platonic. In contrast, Lackoff (1999), for example, demonstrates that our abstract reasoning is also – of necessity – physically embodied:

“Abstract concepts are largely metaphorical, based on metaphors that make use of our sensory-motor capacities to perform abstract inferences. Thus, abstract reasoning appears to arise from the body.”

“We cannot think just anything – only what our embodied brains permit” Lackoff (1980)

Stacey's theory of relationship as recursive loops of conversation seems almost Cartesian in contrast. Whilst the constructivist dimension of the theory is useful, the individual human nervous system is (to use Maturana's terminology) an autopoietic unity. Therefore, whilst from one perspective it might be informative to recognise that the individual and group are singular and plural of the same phenomenon, namely relationship, it is also important to recognise the ability of the single human organism to maintain its individual identity – its unity – through a process of continuous self-recreation. In other words, it seems to me that a missing perspective in Stacey's theory is that it fails to capture the fractal nature of reality. Stacey offers us no insights into the emergence of ontological levels, each offering tantalising but unexplained self-similarity, that seem to be such a distinctive feature of chaotic and complex processes. Whilst the individual and the group are indeed the singular and plural of the same phenomenon, they are also different logical types of the same phenomenon. This observation is non-trivial, since as Bateson points out, mixing up logical types can be dangerous or even pathogenic.

⁷⁷ Whilst writing on the subject of complexity applications to supply chain theory, I should mention Stuart Kauffman. Kauffman is a respected biologist who has researched complex adaptive systems. More recently, Kauffman has moved into supply chain consulting with his Bios Group. This company aims to apply "agent based technologies" to supply chain management IT systems. In effect, this is applying the cellular automata idea from CAS models and trying to get it to help in "real" supply chains. I have not had an opportunity to see any of this technology in action. My position is relatively sceptical however, since this is another example of trying to make the organisation the "object", whilst the manager manipulates it from the outside.

⁷⁸ Jenner cites Ashby's Law of Requisite Variety as follows:

"The variety of changes that lean organisations undergo during any time period must be at least equal to the variety of disturbances that threaten it during that period."

To me, this seems like an unnecessary force-fitting of a general idea from Cybernetics into management theory. Ashby's law is normally worded as follows:

"For appropriate regulation the variety in the regulator must be equal to or greater than the variety in the system being regulated."⁷⁸

In the original "law", the context is one of a closed-loop cybernetic system. And even within this context the law is rather vague and subject to much misinterpretation. It has little, if any, relevance to an open complex adaptive process.

⁷⁹ William James, from the "Brute and Human Intellect" essay (1878) originally printed in *The Journal of Speculative Philosophy* (1898, vol.12)

⁸⁰ Chaotic, of course, in the mathematic sense. Whether it is chaotic in the sense of common parlance, I will leave unexplored.

⁸¹ The microscopic activity may not be noise either, since non-linearity is fractal. The experimenters may not have been able to identify the pattern.

⁸² A digression: We tend to think of our brains as being in our heads. This is only partially true. It would be more biologically, physiologically and psychologically accurate to think of our brains being distributed throughout our bodies. Let's take an analogy: We may talk of the human blood circulation system, recognising that our blood system is a complex network of which the heart is a necessary, but not sufficient, component. In dealing with problems of blood circulation, we would be well advised to take full account of the heart, but would face disaster if we considered it in isolation from our veins and arteries. Yet we seem happy to assume that the businesses of thinking and of emotion are located entirely in the brain. What really happens, is that we think with our entire distributed nervous system, not just with our brain. Our behaviour in the social world is heavily influenced by "feeling states" distributed throughout our bodies. Our emotions, which we have been taught to think live in our heads, are heavily informed and recursively influenced by the status of our bodily organs and distributed neurons. (Damasio (1994)).

⁸³ Of what level of logical type I am not sure. Individual neurons may themselves be complex adaptive systems.

⁸⁴ Some influential writers see thought itself as an "evolutionary" process. But to understand this fully we must develop our conception of evolution into a more accurate model than that suggested by Darwin.

⁸⁵ Bateson highlights this discovery, termed the Webber-Fechner "Law" (published in the 1830s) in Bateson (1991 p200). The law observes that the "strength" of a sensation (weight, sound, etc.) is proportion to the logarithm of the stimulus. For instance to experience "twice" the weight, you must encounter four times the weight. If the relationship between the "external" world and our perceptions of it were linear, then twice the sound, heat, light, etc. would produce twice the sensation. Instead, our human perception varies with the logarithmic value of the external change. As Bateson (1987 p122) says, we benefit from this in terms of great sensitivity to small changes whilst not needing such precision for gross changes. One is able "to hear a mouse in the grass or a dog bark a mile away, yet not be deafened by one's own voice".

⁸⁶ The idea of a paradox creating a chaotic attractor in truth space is an entertaining one. It has a marvellous quality of sounding barking mad and deeply profound at the same time. It also puts me in mind of Bateson's musing that the world of ideas is "probably a self-healing tautology". Gleick comes to similar view: "[I]deas can be thought of as regions with fuzzy boundaries, separate yet overlapping, pulling like magnets and yet letting go." Gleick 1998 p299

⁸⁷ Von Foerster (Self Fulfilling Prophecies: Old and New, Paper presented to the Third Annual Don D Jackson Memorial Conference, 1978, cited in Keeny, B. P. *Aesthetics of Change*, New York Guildford Press 1983

⁸⁸ Nevertheless, we might apply an "animal farm" coda: some observations are more paradoxical than others.

⁸⁹ Similarly, Maturana and Varela (1998) note that everything said is said by an observer, and since observation is paradoxical by nature all observations are paradoxical.

⁹⁰ Stacey would perhaps struggle against the idea of a single person as a psychological unity. It's a moot point. Persons can be substituted for person without losing the flow of my argument.

⁹¹ e.g. Butz (1997), Lindberg et al (1998), Koopmans (1998)). An interesting application is offered by Abraham (1995) who, recognising the essential and healthy distribution of chaos in the mind/brain and the importance of fractal boundaries between its many attractors, proposes that we should talk of personality dischaos, rather than personality disorder

⁹² Other important works in relation to application of chaotics to psychology include Abraham and Gilgen (1995), DeAngelis (1993) Lonie (1991).

⁹³ A hundred years ago, speculation started about the left and right sides of our brains having different capabilities and making qualitatively different contributions to our thinking and behaviour. Many of the initial speculations were wrong, and even through to the 1970's and 1980's some inaccurate and sweeping generalisations were being made about the differences between the functions of the right and left cerebral cortices, leading to a period of "dichotomania" when some people spent a lot of time trying to do all kinds of inappropriate things with the other side of their brains (Ornstein). William James' conjecture, quoted in the introduction to this section, came pretty close to our current understanding, but left out some important things, which we will explore later. We must also learn from the past and steer clear of dichotomania, recognising "that there is almost nothing that is regulated solely by one hemisphere", simply that one or other seems to take a lead role. Again, I shall sweep over these matters too, and concentrate instead on our current state of knowledge about the differences between the two hemispheres.

⁹⁴ Bateson claims this in Bateson (1973) and again in Bateson (1987). Another key element of brains and minds is that of levels – as in levels of consciousness and levels of learning. The theory involved covers a range of writers – Chomsky (see Calvin), Merleau Ponty/Polanyi, and Bateson. My particular conception is of such a mind possessing a dialectical (non-linear) spiral. One way to conceive of the process of consciousness could be as a dialectic between left and right hemispheres, with the right hemisphere contributing the perspective, pattern, distance. It seems that there could be some relation between the hemispheres and what Freudian psychologists would refer to as primary and secondary process. Primary process would, in this conception, be more related to the right hemisphere. Some psychologists see primary process as lacking tense, lacking negatives and making

extensive use of metaphor. Bateson noted that the right hemisphere would not be able to make a distinction between map and territory.

⁹⁵ We should not think of the right hemisphere as “dumb” however. We rely on contributions from our right hemisphere for relatively sophisticated functions such as humour and irony.

⁹⁶ We may then be tempted to ask of our poem: “What does it mean?” but in most societies this is not a question that an artist is required to answer.

⁹⁷ Bateson further hypothesised that when we look for “The Pattern which Connects”, when we think metaphorically, then we are learning to “Think the way that nature thinks”.

⁹⁸ Also relevant is the work of Robert H Frank (Frank (1998)): Emotion handles the strategic reason and rationality the tactical, says Frank.

⁹⁹ William Butler Yeats: "Among School Children" 1926

¹⁰⁰ Porter's philosophical predecessors - Ansoff, Chandler and Sloan, for example - all applied a similarly rational, logical and linear approach to management. There can be no doubt that their theories have influenced millions of management decisions. They may have generated great wealth for a small number of CEOs and a larger number of shareholders, but no one can prove or disprove a causal link between the decisions taken and the fortunes made and lost. Indeed, we have seen that to model the causal effects of just one of Sloan's decisions would take more energy than exists on our planet.

¹⁰¹ Revans applied these ideas widely in the UK at the National Coal Board, GEC and the National Health Service. He had greater success still in mainland Europe, where his ideas were more widely embraced.

¹⁰² Their conception of learning applies the same ideas which were captured earlier by Bateson in his theory of Levels of Learning Bateson in turn borrowed much of it from Chomsky.

¹⁰³ Although I note that the latest (fourth) edition of his book no longer flags up the latter chapters as a radical departure, perhaps signalling that they are now entering the mainstream.

¹⁰⁴ Even in papers that seem to offer potential for exploring paradoxical, aesthetic and post-conventional perspectives, theorists seem to have left them unexplored. Lamming, Cousins and Notman (1996c) opens up a window for intersubjectivity and social constructivism to be considered. Likewise Lamming, Caldwell, Harrison and Philips (2001) introduces some interesting metaphors. Sadly the opportunity to introduce the paradoxical, the intuitive or the irrational is largely missed.

¹⁰⁵ Kirzner (1979)

CHAPTER FOUR: A POST-NORMAL RESEARCH AGENDA

Introduction

“No Problem can be solved from the same consciousness that created it. We must learn to see the world anew” Albert Einstein¹

In previous chapters, current theories of supply chain were introduced. These were then reviewed critically and potential flaws in their underlying epistemology were highlighted.

In this current chapter, I outline my own philosophical position, describe how it influences my theoretical approach, and how this in turn influences my research agenda.

An Alternative Ontology and Epistemology

Warren McCulloch² asked: “What is a man, that he may know a number, and what is a number, that a man may know it?” This is a useful question, since it brings together ontology and epistemology. We can re-phrase it as follows:

“What is a man, that he may know a supply chain, and what is a supply chain, that a man may know it?”

Ontologies and epistemologies are highly personal. I found a table which summarised competing world-views in Reason (undated) very useful in helping me to clarify my world-view. World-views are beliefs: no more and no less. We can never prove them: just as science can never prove anything.

I shall outline my own “ologies”, and contrast them with those prevailing in supply chain theory. My ontology is of the class which Reason calls “Mind-Matter Integration”. This can be contrasted with the body-mind split of Cartesian dualism. At first sight, Mind-Matter Integration might sound weird. It is, however, a perfectly reasonable philosophical position, and in many ways, much more commonsensical than the dualist or materialist position. The Mind-Matter Integration position sees mind as embodied and visceral. It avoids the need for mysticism, for some sort of ephemeral spirit, living in a spirit-world separated from the physical world.³ Like Bateson⁴ I see mind as “immanent in nature”. In this phrase, mind has a special meaning, not just the individual human mind but mind as the world of ideas: Ideas are immanent in nature. Bateson came to this view by asking “how can living things know anything: how to grow, for instance, or how to drive a car, or how to evolve?”⁵ He concluded that there was not only an individual human knowing, but also a “wider knowing which is the glue holding together the starfishes and sea anemones and redwood trees and human committees”. The living world, the world of creatura, is made of “stuff”, pleroma, for “there can be no creatura without pleroma”, but necessarily integrated with the stuff are ideas. The living world is shaped by patterns, differences and distinctions. These patterns, differences and distinctions are ideas. The patterns have meta-patterns; patterns of patterns. The search for a better understanding of this meta-pattern engaged Bateson throughout his life. Let us return to the way he phrased his inquiry:

“What pattern connects the crab to the lobster, and the orchid to the primrose, and all four of them [to ourselves?]” Bateson, 1979 p8

When we look at patterns, whether they are shapes and forms or patterns of events over time, we can use another important word to describe them: relationship. What relationship, or pattern of relationships, we might ask, connects the crab, lobster, orchid, primrose and human? It is in the nature of this form of inquiry that ontology (what exists?) and epistemology (what can we know?) overlap or merge.

When we combine the ideas of pattern/relationship with ideas of context, we discover that ideas tend to arrange themselves into hierarchies.⁶ As we saw in Chapter Two, Bateson, called these hierarchies Logical Levels, or Logical Types. Bateson applied this idea to a range of issues in art, anthropology and psychology. He was concerned that confusing levels of logical type could be psychologically dangerous, and suggested that in humans the right hemisphere has difficulty in making such distinctions.

Chaos and complexity theory seems to support this view of the way things are in the living world. Living phenomena have many features and dimensions, and when we try to plot these phenomena in phase space, they produce attractors and fractals. One of the key features of attractors and fractals is self-similarity: patterns repeat at many different levels of detail or abstraction

As an example, let us look briefly at Bateson's⁷ theory of levels to learning. He first introduces the concept of *Zero Learning*: "... the simple receipt of information in such a way that a similar event at a later... time will convey the same information: "I learn" from the factory whistle that it is twelve o'clock." Bateson suggests that whilst such behaviour is often termed learning in "ordinary parlance", it is learning of the simplest level, otherwise termed habituation or stereotyped behaviour.

Further levels of learning are added to the base level as follows:

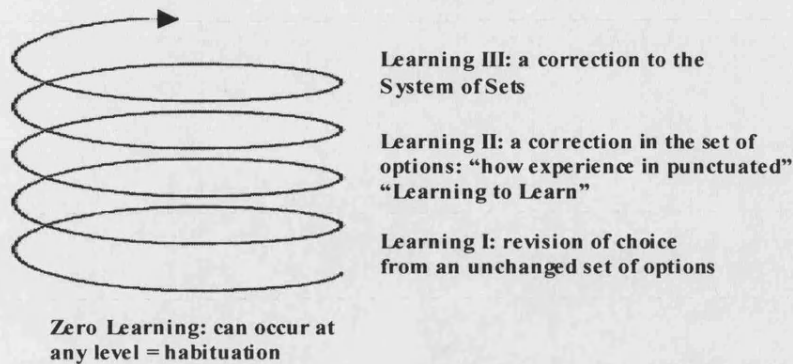
- *Zero Learning* is characterized by specificity of response, which is not subject to correction.
- *Learning I* is change in specificity of response by correction of errors of choice within a set of alternatives
- *Learning II* is a change in the process of Learning I, e.g., a corrective change in the set of alternatives from which choice is made, or it is a change in how the sequence of experience is punctuated.
- *Learning III* is a change in the process of Learning II, e.g. a corrective change in the system of sets of alternatives from which choice is made.
- *Learning IV* would be a change in Learning III, but probably does not occur in any adult living organism on this Earth. The combination of phylogenesis with ontogenesis, in fact, achieves Level IV.⁸

What Bateson offers us here is an example of ideas organising themselves into hierarchies. He has the following to say about Learning II:

"It is natural to look into what goes on between people to find contexts of Learning I which are likely to lend their shape to processes of Learning II. In such systems, involving two or more persons, where most of the important events are postures, actions, or utterances of the living creatures, we note immediately that the stream of events is commonly punctuated into contexts of learning by a tacit agreement between the persons regarding the nature of their relationship – or by context markers and tacit agreement that these context markers shall "mean" the same for both parties." Bateson (1973)

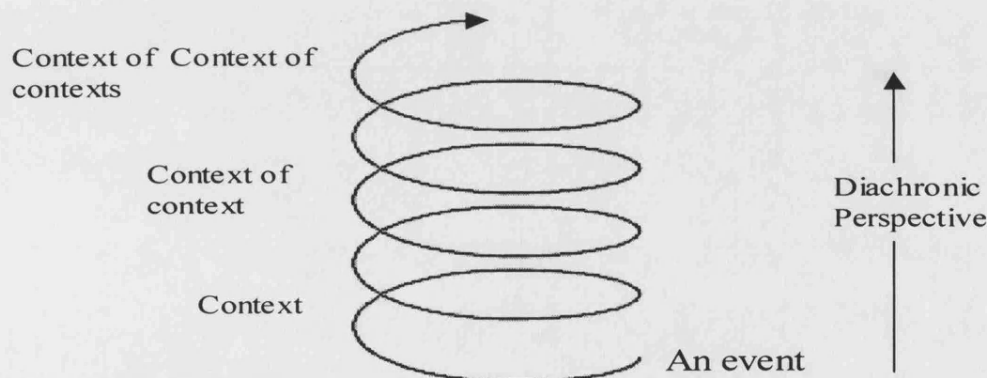
Such an ontological hierarchy, where each level is progressively related to the next level, can be pictured as a spiral as shown in the diagram below (Fig (8)).⁹

Fig (8)

Bateson: Learning Theory

We can think of events and their contexts using this same framework, and applying terminology from Saussure's linguistics (Saussure (1989)). If we consider an event *diachronically*, we can put it into a context. If we then think about its *context* diachronically, we derive a context of contexts, and at least in theory, if we think about a context of contexts, then this will have a context too, although, like learning III, it may be very difficult. This is shown diagrammatically in Fig (9) below:

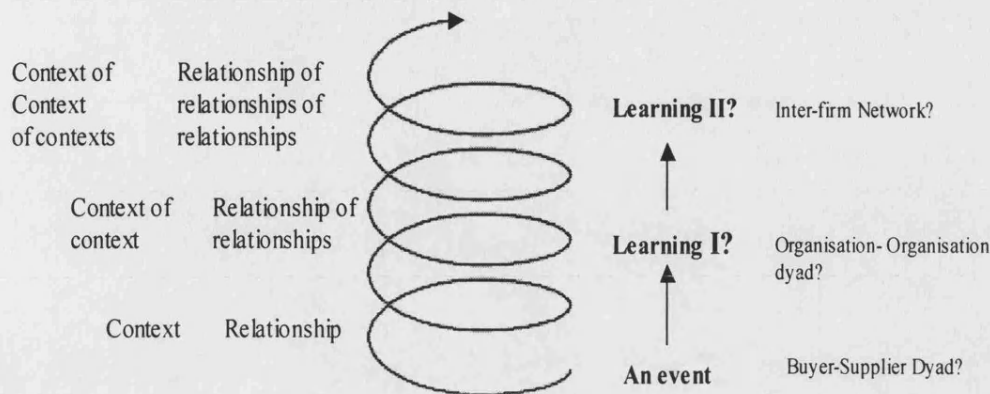
Fig (9) Levels of Context and Logical Types



We can now take another step in a journey of ontological discovery. Earlier I expressed a view – and by its nature it can be no more – of “the way things are, in and of themselves”. My view encompasses a recognition of pattern and relationship as distinguishing elements of the living world, combined with a tendency for living phenomena to organise themselves into hierarchies.¹⁰

We can now combine some of these ideas and apply them tentatively to that part of the living human world which we call “business”. We have seen that humans “have” relationships in business¹¹. Humans invent constructs called organisations. Further, we either experience, or invent relationships between these organisations.

At the next hierarchical level, our self-invented organisations form themselves into real-or-imagined networks. At each step in this story, I am suggesting that we are moving along an ontological and epistemological spiral, with successively “nested” levels of context and/or relationship and/or learning. Thus we can extend our diagram as shown in Fig (10) below:

Fig (10) Organisational Context and Logical Levels

In Chapter Two, the concept of supply chains as networks of conversations was introduced. At this point, we can reintroduce the idea of conversations into our current considerations of the ontology of business life, characterised by patterns and logical levels. We can therefore think of the conversations taking place within logical levels – contexts within contexts; a matter not only of how experience is *punctuated* but also how it is *articulated*.

As social creatures, we inhabit our relationships: a significant part of the way we create and recreate our relationships, and therefore the nature of our existence, is through conversation. Socially, we are able to set a context for a future which is different from our past, through conversation:

“Language is the house of being and man lives in that house” Heidegger (1947p21)

We can apply the same perspective, of a recursive, hierarchical reality to the challenge of how we cope in the world and how we attempt to bring about change. The first step in doing this is to realise that *whatever we do*, things will not turn out the way we planned:¹²

“One day, you will die
 You will be, at that time, exactly as satisfied or unsatisfied as you will be
 Your life will not turn out as you hope it will
 There is no hope of life turning out as it should
 Life turns out as it does”
 Goss (1996)

Nevertheless, conversations about the future help us to shape the context of possibilities that we co-create with others. None of these possibilities come with any guarantees.

Combining the idea of logical types with this existential perspective generates the possibility of a *hierarchy of conversations*¹³:

Conversation for relatedness

One of the big mistakes in business conversations is to jump straight into talking about action. It is often assumed that everyone “knows what the problem is”: it just needs sorting. Instead, business conversations need to start by establishing whether there is, in fact, a relationship between the people present. In addition, the people present have to get to a stage of genuinely participating in a conversation. This genuine participation often simply does not happen in business conversations. A successful conversation for relatedness will establish that the people present do indeed have some form of relationship, and that they have a shared interest in a possible future state of affairs.

Conversation for Possibility

This conversation can not take place until after a successful conversation for relatedness. A conversation for possibility is about “making a stand”. The people involved in the conversation make a commitment to a future state of affairs. At this stage, the commitment is not related to the *means* of achieving the future state. It is perfectly acceptable for them to have no idea how the desired future situation will be achieved.

Conversation for Opportunity

Moving from Possibility to Opportunity takes us a little closer to familiar ground in the conventional management world. However, the perspective is still radical. These are conversations about the plans and their feasibility, but they are also strongly focused on the future rather than the present. The emphasis is on defining, as clearly and unambiguously as possible, what the required future will be like.

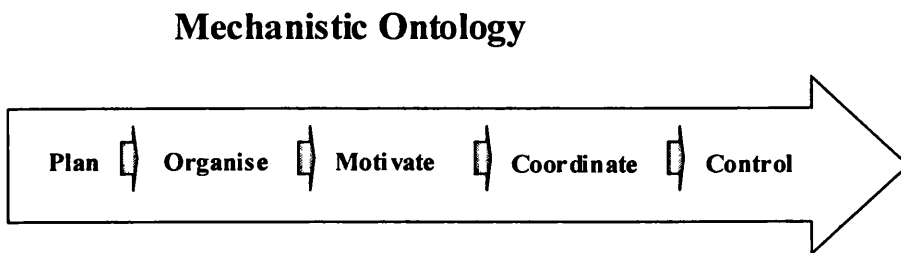
Conversation for Action

Conversations for action can be of two types:

- Requests can be made of others, which can be accepted, rejected, or followed by counter-requests
- Promises can be made to carry out specific actions by particular dates.

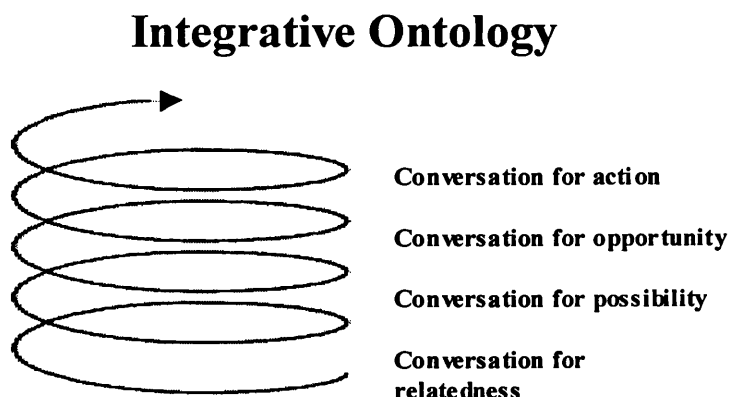
This hierarchy of business conversations does not promise a particular outcome. It is a dialogue. At any point, conversations can break down. They may move up the sequence and back down it again, if commitment breaks down. For me, the important aspect of thinking about management in this way, is that there is a pattern, though not necessarily a sequential one. The focus is on what is going on; on the nature and quality of the conversation and the nature of the relationship. We can contrast this recursive, socially constructed, dialogic conception of management, with the prevailing sequential/linear models of our orthodox discourse. The current hegemony, of which we can observe the footprint in almost any management presentation or consultant’s proposal, can be captured as shown in fig (11)

Fig (11)



Whereas, the alternative conception I offer in this Thesis is as shown below in Fig (12)

Fig (12)



If, for the sake of argument, we accept this non-linear multi-layered ontology, then how are events linked together? Suppose we accept that linear causality is not a sufficient description of what happens in *creatura*, and so is of limited use in understanding what happens in business. If we have not got linear causality, then what have we got instead? The best I can do to answer this question is to say that we have got *evolution*. Events evolve, in the same way that species, and ideas, and thoughts, evolve, through a stochastic process. Maturana and Varela (1998) call it “structural drift”. It is not teleological: not necessarily moving towards greater perfection, but it is a state of continuous flux.

People and organisations, then, interact and co-evolve in an environment akin to Bateson’s conception of “evolution as a mental process”

The Philosophy of Supply

In this Chapter, I have briefly outlined my ontology and epistemology, and contrasted it with mainstream management theory. In the following paragraphs, I look at a number of differing world-views in more detail. Current supply chain theories are considered against this taxonomy. This provides an opportunity to explore in more detail the contrasts between the research in this thesis and other research.

System Views

Stacey (2003) offers a framework of the system-views adopted by management theorists. His outline starts with *Cybernetics* (Ashby (1956) Wiener (1948)). Cybernetics recognises that there are often circular chains of causality in systems. It also acknowledges negative feedback, in which the results of actions become inputs to the system, in order to correct errors and improve performance. Whilst this is an improvement over a purely linear view of causality, and can offer insights where links between events can be perceived clearly, it offers a simplified and incomplete perspective.

Strategic Choice remains the dominant theory-in-action in the boardrooms of companies and in the lecture rooms of business schools. In this theory, senior executives are able to determine the required future state of the company, understand the current market position and resources, and design a sequence of activities that will take the organisation to its required goal. If the plan contains performance measures and some degree of corrective action, then it incorporates a cybernetic approach.

Systems Dynamics (Forrester (1968)) introduces the concept of non-linear causality, recognising that feedback loops can be both positive (amplifying) and negative (error-correcting). This framework recognises that business phenomena may be unstable rather than in equilibrium. The theory has been influential, particularly via Senge (1990) and other advocates of the learning organisation. One of the significant features of this position is that it recognises that outcomes are often counter-intuitive and systems can be highly sensitive to minor changes.

Open Systems theory takes a different perspective, by recognising that human systems do not operate in solipsistic isolation. Organisational boundaries are permeable and mutable. The challenge of management becomes one of managing boundaries and the flow of information and energy across them. The goal is adaptation to the environment. Stacey notes that this perspective is typically combined with a psychoanalytic view of human nature.

Stacey then goes on to outline the emerging theories of *Complex Adaptive Systems* and their application to management theory. I have covered these theories elsewhere and so will not repeat them here, except to say that Stacey criticises the application of Complex Adaptive

theories to business. In his view, most theorists working in this area have failed to see the radical consequences of the theory, and instead try to fit their theory into a logical and cognitivist paradigm.

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Stacey introduces his theory of *Complex Responsive Processes*. This focuses on processes rather than systems. The theory has a number of unique elements, and space prevents full explanation. However, the distinctive feature is the combination of group psychology/psychotherapy with ideas from complexity theory such as non-linearity and emergence. In particular, the idea of emergence is applied to the process of relating through relational themes.

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) summarises each of these Systems/Process views:

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1) System/Process Views and Their Implications (Based on Stacey (2003))

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	Type of System	Human Nature	Methods and Methodology	Dealing with Paradox
Cybernetics and Cognitivism	Macro, time span of control, move to equilibrium	Individual is primary, rational and conscious (emotional and unconscious considered less important)	Knowing = realist. Laws and Logic, Models, Control, Not reflexive	Little attention paid to paradox
Strategic Choice Cognitivism	Interacting organisations (mostly macro), cybernetic system, feedback, move to equilibrium	Individuals are cybernetic, little attention to emotion, or if so - humanistic (Visions etc.) or cognitivist. Control	Objective Observer, Steps outside to observe the system	Paradox is to be "solved"
System Dynamics Cognitivism	Macro Level, (micro events are homogenous), feedback, non-equilibrium, "Leverage"	Cognitivist/constructivist/humanistic, Individual (not group) is primary, more attention to emotion	Objective Observer, Realist	Opposites and Paradox not a core area of emphasis
Open systems and Psychoanalytic	Systems Perspective, Move toward equilibrium, micro and macro	Emphasises unconscious processes, individual mostly primary	Observer/Manager is positioned on the boundary of the organisation and is "semi-objective"	Recognises the importance of paradox
Complexity Theory	Systems Perspective, micro or macro, attractors and/or strange attractors, self-organisation and chaotic	Cognitivist (albeit mistakenly?), Focus on individuals	Objective Observer (wrongly?)	Does not emphasise paradox (though it probably should?)
Complex Responsive Processes	Conversations, micro-level focus, bounded instability, novelty and creativity	Group focus, "Relating", Relationship, Intention emerges from relationship	Participant inquiry, Free-flowing dialogue	Paradox important, and cannot be resolved, only rearranged

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World Views

In the previous section, Stacey's framework of systems/process views was used to help us compare and contrast the philosophical positions of supply chain theorists. In this section, I introduce another framework for considering world-views, this time from Reason (undated). There is a significant overlap between the two frameworks, but each brings a different perspective. Reason's framework summarises the different positions under three headings: Mainly about matter, mechanistic; Mainly about mind and spirit, and Mind-matter integration. The framework is shown in Table (4), below:

Table (4) A Representation of Competing World-Views (From Reason (undated))

	Mainly about matter; Mechanistic		Mainly about mind and spirit		Mind-matter integration	
	Dualist.	Materialist	Idealist	Social constructionist	Panpsychic	Participatory
Ontology	Mind and matter are real, but distinct entities, neither of which is reducible to the other.	All is matter. Mind is an emergent epiphenomenon, or non-existent (materialism can be seen as a truncated dualism with mind lopped off)	All is ultimately pure consciousness or spirit. What we call the natural world is either an illusion or in the end reducible to mind	Reality is a social construction mediated by language and shaped by social, political, cultural, economic, ethnic and gender values crystallised over time. "There is nothing outside the text"	Consciousness and matter arise together and are inseparable. Reality is self-organizing, emergent, complex, evolutionary, systemic	Subjective-objective: human self both autonomous and embedded in participatory relationship with the given primordial reality, in which the mind/body actively participates
Epistemology	Objectivist/realist: Findings 'true; meaning repeatable, verifiable, quantifiable. Knowledge accumulates over time, approaching 'Truth'.		Universal or Absolute Mind, knows all things directly. Lesser minds, know through participation in Absolute Mind	Knowledge is transactional, subjectivist, politically determined. Deconstruction of grand narratives	Knowing resides not only in human minds, but in a wider ecology of mind.	Knowing through active participation. We know our world as we act within it with critical subjectivity. Extended epistemology
Methodology	Methodology of objectivity: separating subject and object: experimental, manipulative		Intuition, revelation, mysticism, mindfulness disciplines, esoteric methodologies	Various forms of dialogical, transactional, qualitative, linguistic inquiry. Inquiry recognised as partial, politically determined	Sympathetic and compassionate inquiry, awareness of subtle sensitivities, holistic approaches	Co-operative forms of action inquiry; community of inquiry within community of practice
Axiology	Propositional knowledge about the world is an end in itself, intrinsically valuable. Knowledge is value free.		Primary values are those of spirit and mind: contemplation, unity, dissolution of ego, overcoming the illusion of a separate world.	Propositional, transactional knowledge is instrumentally valuable as a means to social emancipation	Universal sympathy and compassion for all beings. All things have intrinsic value, right to existence and full self-realization. Ecological awareness. Cosmos as sanctuary.	Practical knowing how to foster human and ecological flourishing is the primary value, supported by propositional, experiential and other forms of knowing
Major philosophical problem	If mind and matter are ontologically separate how can they interact at all?	How can subjective, conscious mind emerge from non-sentient matter?	If all is consciousness or social construction, how do we account for the universal, pragmatic, common sense supposition of reality?		Fundamentally opposed to the dominant mechanistic (dualist or materialist) perspective, and as such appears both mystical and functionally irrelevant. Must struggle for acceptability. Distinguished philosophical lineage unacknowledged and unrecognised	
Major contribution to affairs	Hugely powerful methodology for understanding and manipulating the macroscopic world. The danger is that as a worldview it brings about a disenchanted and dead world		Draws attention to the contribution of consciousness, social relations power and politics, gender and race in constructing our world. Draws attention to the limits to our knowledge of the world. The danger is the "real" sensuous, embodied and more than human world disappears in a welter of social construction		Provides for a re-enchantment of the world and an honouring of the rights of the more than human. Challenges us to discover a new form of knowing and methodologies which honour the integration of mind-matter and politics with epistemology. The dangers lie in the huge demands of such methods.	

In the following table, Table (5), I have tentatively categorised a range of published supply chain theory using Reason's framework:

Table (5) Worldviews of Some Supply Chain Theorists (Tentative)

	Ontology	Epistemology	Methodology	Axiology
Hall (1996)(1998) (1999)(2001)	Maily constructivist, sometimes draws on existential concepts	Tacit knowledge	dialogical and social constructivist	Part propositional/social constructivist, but with some mechanistic leanings (e.g. see some of his writings on partnering)
Lamming (1993) (1994) (1996a)(2000a)	Mechanistic/dualist, but with participatory leanings	Mechanistic (findings repeatable, knowledge accumulates), but with some leanings to critical subjectivity	Mixed methods, some dialogical, some mechanistic	Social constructivist? Lean Supply as emancipation? And/or mechanistic ("lean usually works"?)
Cox (1996)(2001a,b)(2003)	Mechanistic/Dualistic: succes is about controlling assets	Abstractive reasoning, but metaphors are about leveraging assets	Experiment, objectivity	Mechanistic: knowledge is "value free". Interested in establishing "fundamentals"
Hines (1994)(2000)	Mechanistic (tools and techniques)	Mechanistic: Network sourcing is "true" and "real"	Mechanistic: Objectivity, experiment, questionnaires	Mechanistic: knowledge is "value free".
Ford (1990)	Social constructivist: Interaction approach	Mechanistic: Network Perspective is "true", Knowledge accumulates	Mixed methods but mainly mechanistic	Sometimes mechanistic, when findings presented as "value-free", sometimes social constructivist when findings are propositional
Gibbs (1999)	Social constructivist: Interested in studying "relationship"	Social Constructivist: knowledge of respondents and researcher is subjective	social constructivist with mechanistic leanings (questionnaire/interview)	social constructivist: It is good for people to understand how relationships evolve
Croom (1996)	Social constructivist: studying processes of interaction and innovation	Social constructivist: synthesis of concepts	Participative: longitudinal study at Jaguar Cars	Social Constructivist: propositional knowing, dynamics of networks
Sako (1992)(1998)	Mechanistic: economic competitiveness	Mechanistic: ideal types are largely seen as "true"	Mechanistic: questionnaires and interviews	social constructivist
Caldwell (2001)	Social Constructionist: reality emerging from interactions at work (and not as reported in most management texts)	Social Constructionist: Knowing subjective and political (though Critical Theory a little too pessimistic)	Social Constructivist: Participative/ethnographic	Participatory: concerned with people's wellbeing at work
Cavinato (1999)	Social constructionist: perceptions become reality	Constructionist: Knowledge in supply chains subjectively determined	Constructionist: interviews subjectively interpreted	Constructionist: Propositional knowledge about the role of purchasing is potentially valuable
Ellram (2002)	Mechanistic	Mechanistic: assumes findings are "true" and largely repeatable	Mechanistic: case study approach but aimed at collecting "objective" "data"	Constructionist: aims to find links between actions of purchasing department and "success" in target costing activities
Cousins (1994) (2002)	Mechanistic/dualist: builds a "model" to aid decision making	Mechanistic: the model approaches "truth"	Mixed methods: questionnaires, interviews	Mechanistic: the model "is"

Table (6) summarises the views of these writers, adding my own intended philosophical position. Note that the categorisations are broad and very tentative, and intended only to highlight and contrast the philosophical position of this Thesis.

Table (6) Summary of Worldviews of some Supply Chain Theorists (Tentative)

	Mainly about matter; Mechanistic		Mainly about mind and spirit		Mind-matter integration	
	Dualist.	Materialist	Idealist	Social constructionist	Panpsychic	Participatory
Ontology	Cox Hines	Lamming Sako Cousins	Ellram	Hall Croom Ford Cavinato	Gibbs Caldwell	Price (intended position)
Epistemology	Cox Hines	Lamming Ford Cousins	Ellram	Hall Croom Caldwell Cavinato	Gibbs	Price (intended position)
Methodology	Cox Hines	Ford Sako	Ellram Lamming Cousins	Hall Croom Caldwell Cavinato	Gibbs	Price (intended position)
Axiology	Cox Hines	Hall Cousins	Ellram Lamming Cavinato Ford	Croom Gibbs Sako		Caldwell Price (intended position)

It can be seen that the majority of theory is clustered around the first two paradigms. This classification should not be perceived as derogatory. These are the strongest paradigms within the current body of knowledge in management theory, and it would be surprising indeed if supply chain did not follow this trend.

My own position, as indicated earlier, is that of mind-matter integration. I do not lay claim to any intellectual superiority; I merely want to contrast my position with that of some of the other writers in the genre. I am taking an unusual philosophical position: one might say a *heretical* position. This makes the challenge of writing the thesis greater, since much of what I have to say does not fit the current management discourse.

Emerging Challenges

So far in this Chapter, I have reviewed the system views and world-views which influence supply chain theory. I have also outlined my own world-view and contrasted it others.

Next, I shall pursue the world-view that I have offered a little further, and ask "Supposing that there are indeed some weaknesses in the currently dominant world-views and that these do influence thinking in supply chain theory with potentially negative consequences.

For the sake of exploring these ideas, what would an acceptance of them – however tentative – imply? What ought we to be doing if these ideas are “correct”? Where should we be focusing our attentions and our efforts? What sort of questions should we be asking and how should we be looking for answers?”

My response to this comes in three parts as shown below:

1. We should be researching the actions of *fully human men and women*....
2. Who are embedded in a *living, biological, creatural world*
and
3. We should recognise the importance of such research for the *survival of the human species*

I shall take each of these three points in turn and expand and explain:

We should be researching the actions of fully-human men and women

We saw in Chapter Two that current management theory *de-humanises*. Homo Oeconomicus is not worthy of our trust or our respect. Unfortunately, we do sometimes behave as Homo Oeconomicus, but at other times we behave as Homo Reciprocans. We are both: The nature of being-both is fractal as we shall see later in the Thesis. At any time – paradoxically – we are both Reciprocans and Oeconomicus; we can be neither without simultaneously possessing a presence of the other.

We are social: very likely to do something because we want to earn the recognition or respect of a group to which we want to belong, sometimes whatever the personal or ethical consequences. We are also *daimonic*: we have a shadow side. We are neither purely good nor purely evil, but both, and again these aspects exist as fractal paradox; each creating the possibility and the emergence of the other.

Orthodox theory populates its supply chains with “rational fools”, but a purely rational business world is a world *without wisdom*. We are non-rational, as likely to be guided by aesthetic or emotional drives as by narrow reason. *Narrow reason can never bring us wisdom*.

We are driven by, and can only exist through, the tacit and the *intangible*¹⁵. Even our economic lives are populated with the little-understood values which we attach to the intangible, whether it be for amusement, social confidence, conspicuous consumption or aesthetic pleasure.

We should be researching men and women embedded in a *living, biological, creatural world*

We have seen that the business world of our prevailing theory is an *unnatural world*. Current theory “pleromatizes” the business world: fills it full of thingish-things. As a result, our theory gets bogged down in inappropriate morass of metaphors about leverage, power, forces and impacts. To the extent that, through the double hermeneutic, people allow themselves to become “things”, then this objectification justifies itself, but in the process it also dehumanises.

Whilst non-living things sometimes follow the “rules” of classical physics, the distinctive nature of the living world is not one of cause and effect, but of surprise. Events evolve unpredictably and stochastically. Life does not progress in lineal fashion but turns in on itself recursively: to define a particular action as a cause, and another as an effect is both inappropriate and unhelpful in the living-world.

The supply chains we imagine and inhabit are webs of relationship, conversations and emotions. Such webs are subtle things, full of the intangible, the tacit and the unconscious. These webs are

deeply and fully human: we construct them out of our capacity for sociality and intersubjectivity. They are *invisible* to our orthodox supply chain theories. (Capra (1996))

How could we make these occult chains/webs visible? We would need to draw on metaphor, analogy and narrative, to become tolerant of paradox. We would need to stop seeing supply chains as a series of problems to be solved through induction and deduction, and instead see them as an emotionally charged social environment which we have no choice but to inhabit, and where the only choices open to us are about the quality of our participation.

We should recognise the importance of such research for the *survival of the human species*

As I have outlined above, our current supply chain theory is a *story about dehumanised people living in an unnatural world*. We have been telling ourselves this story for so long that we no longer question it. And because we no longer question it, we begin to make it true:

“Poverty is the creation of a worldview that has pitted people against nature. That worldview has defined scarcity as the condition of nature, and has then tried to create technologies that are supposed to compensate for that scarcity. But the reality is that these technologies actually create scarcity because they destroy the environment, they destroy ecosystems, and they leave people poorer. For example, the sea has given enough to fisherfolk for centuries. But new technologies have been generated, trawlers so huge that they can take twelve jumbo jets in the trawl net. They scrape the entire sea floor, catching everything that comes in their way, disrupting cycles of regeneration... ninety percent of the fisheries of the world are near collapse. There is not much left to catch. The fisherfolk of India become poorer because of these technologies, which were meant to remove poverty.” Shiva (2000)

The human species has had a dramatic and devastating impact on the face of our planet. It is tragic that we have done this *unknowingly*. Our dehumanised world-view is summarised by Bateson as follows:

- a) It's us against the environment
- b) It's us against [the others]
- c) It's the individual [or the individual company, or the individual nation] that matters
- d) We can have unilateral control over the environment and we must strive for that control
- e) We live within an infinitely expanding “frontier”
- f) Economic determinism is common sense
- g) Technology will do it for us.”

Bateson, *The Roots of Ecological Crises*, In Bateson (1973)

He adds a cautionary note: “The creature that wins against its environment destroys itself”. Those of us who are part of the 20% of the world's population that has 80% of its wealth, have been acculturated into believing that, with a little effort, we have a right to expect more goods and luxuries every year. This expectation is not a rule of nature. The planet was not designed by anyone to provide the few with accelerating levels of greed, and leave the many with poverty and environmental fallout. In nature, more is not better: enough is good, too much is fatal.¹⁶

Boisot puts it rather drily:

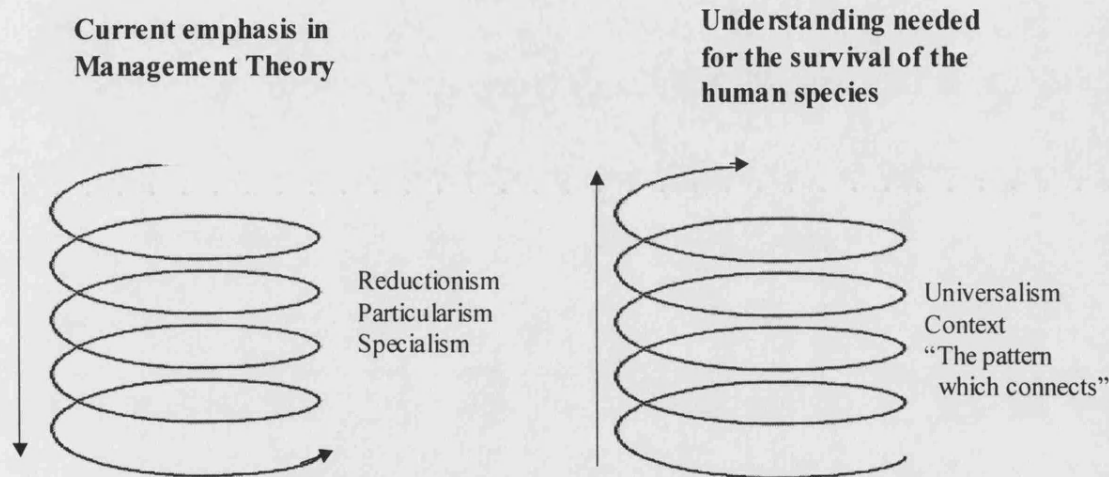
“The more spatially scattered the population brought into a communication nexus, the more important it becomes that it should be universalistic in its orientation rather than particularistic”
Boisot (1995) p14

More bluntly, it is easier for us to tolerate the thought of the starving and the dying if we don't know them. And it is easier still if from birth we have been raised on the myths of economic “growth”, “freedom” and “opportunity”.

But what is the relevance of this to academic theories about supply chains? Well, for any thinking practitioner quite a lot. We can be sure that our employer's annual report will talk of equality, diversity and opportunity, in language carefully drafted by the corporate lawyer and the public relations department. Nevertheless, the individual actions and decisions which feed and maintain our corporate epistemology are channelled through the cut and thrust of trade and commerce. It is the buyers, and the sellers, through whose hands the arms deals pass and who generate the business that directly or indirectly employs the children in the factories. *It is our choice, both individually and collectively, whether to accept the established business myth, and continue to behave as dehumanised people living in an unnatural supply chain world.*

So long as our theory continues to repeat and reinforce this myth, the human species can only accelerate toward its demise. Management theory's contribution to potential human extinction is summarised in Fig (13):

Fig (13) Management Theory's contribution to the potential for human extinction



Concepts from Another Discipline: Anthropology

“Know then thyself, presume not God to scan;
 The proper study of Mankind is Man.
 Plac'd on this isthmus of a middle state,
 A being darkly wise, and rudely great:
 With too much knowledge for the Sceptic side,
 With too much weakness for the Stoic's pride,
 He hangs between; in doubt to act, or rest,
 In doubt to deem himself a God, or Beast;
 In doubt his Mind or Body to prefer,
 Born but to die, and reas'ning but to err;
 Alike in ignorance, his reason such,
 Whether he thinks too little, or too much:
 Chaos of Thought and Passion, all confus'd;
 Still by himself abus'd, or disabus'd;
 Created half to rise, and half to fall;
 Great lord of all things, yet a prey to all;
 Sole judge of Truth, in endless error hurl'd:
 The glory, jest, and riddle of the world”
 From Alexander Pope, An Essay on Man (1734)

Through the course of Chapter 3, and also within this current Chapter, I have portrayed the UK/US business world as guided by an *unnatural* epistemology. Whilst aspiring to a scientific rationality, our theories of management resemble nothing more than a monotheistic superstition, devoid of *wisdom*. Pope suggested that the proper study of mankind is man: Our supply chain theories assume the proper study of business to be *mammon*.

Whilst hemmed-in by this orthodoxy, we have little chance of gaining a more enlightened perspective. We need to see business behaviour as biological and social more fundamentally than it is either economic or rational. Our search is for a fully-human understanding of business. Where can we look for “the proper study of humankind?”

A discipline which has the study of humankind at its core is *anthropology*. Historically, we find it in the sixth century BC in the writings of the Greeks Xenophanes and Herodotus.¹⁷ In Christian theology anthropology contrasts the nature of man with the nature of God. In philosophy, it appears in the development of the influential philosophies of Kant, Hegel and Scheler; Scheler’s writing influencing Heidegger in turn.

Nevertheless, anthropology as most academics think of it, is a more recent practice, growing “out of the intersection of European discovery, colonialism and natural science... influenced by the same philosophical currents that led to the Darwinian revolution.”¹⁸ In the nineteenth century anthropology was concerned with the study of “primitive” people, and associated with a search for explanations of how the human species evolved from primitive to modern. The unfortunate assumption made by these early anthropologists was that the colonies contained less evolved humans. Gradually, there was a recognition that the smaller and less technologically advanced societies were not populated by evolutionarily “primitive” people. Rather, these people demonstrated the same huge potential and diversity, characteristic of a single human species. Today, anthropology has developed a more appropriate stance toward human diversity:

“[M]ainstream anthropology has... shifted its focus from an exclusive focus on non-Western small-scale societies to ... labour unions, social clubs... and communities found in urban and industrialised settings.” Monaghan and Just (2000) p2

Within this setting, the questions anthropologists ask are:¹⁹

“What is unique about human beings?”
 “How are groups of people... formed and what holds them together?”
 “Who are we? How do we associate with each other? What do we do?”

Anthropologists are particularly concerned with human “sociality”: the way that humans depend for their existence on their interrelatedness to each other. Furthermore, they are fascinated with the tremendous diversity exhibited by this interrelatedness.

In my quest for a more fully-human understanding of business activity, anthropology offered potential:

“Anthropology is a restless and fervent study which plagues the investigator with moral as well as scientific questions” Levi-Strauss (1966)

Indeed, when anthropologists study economic behaviour they do it *in context*: in the particular minutiae of a specific ethnographic experience. For an anthropologist, it would be absurd to study economic behaviour separately from the emotive social sweep of human action.

The origins of the term economics are rooted in the idea of “hearth and home”: anthropology offers the opportunity to take economics back from the domain of the heartless monad and bring it “home”; Home to the realities of everyday social life.

Strategic Supply: A New Definition and a New Agenda

Some logical consequences follow from the points I have been making in this chapter. I shall summarise, before moving on to outline their consequences:

- I take the position (like many others) that mind – in the sense of the world of pattern and “ideas” – is immanent in nature.
- I take the position that the living world is distinguished primarily by pattern and relationship, rather than by forces, impacts or quantities
- These patterns in the living world tend to arrange themselves recursively, into multiple levels, contexts and contexts-within-contexts
- A reductionist, linear, or subject-object approach to understanding human behaviour is not only philosophically mistaken but also potentially dangerous to life
- Theories which ignore these facts, such as much management/supply chain theory, produce stories about dehumanised people living in an unnatural world: a world without wisdom
- Instead of this, we should be researching the actions of fully-human men and women, embedded in a living, biological, creatural world. Within this world, relationships form and are formed by a continuing social and conversational trophallaxis.
- Anthropology, in particular, studies the minutiae of human action to try to address questions about what makes us social and human, and what it means to be social and human.

This line of thinking brings some promise and also some difficulties. First the promise: since I am looking somewhere different from other theorists, there is – I hope – a chance that I will notice things that are different, or important, or both. Now the difficulty: I have ended up in a position where I need to create a new definition for my field of study to avoid the double-bind of having a field of study which is not philosophically commensurate with my line of approach.

I should explain further. I have vilified reductionism. And yet my specialist subject is supply management. It is now clear to me that this field of study itself contains the dangers of considering an area of human activity “out of context”. There can be no buyers without sellers, any more than there can be veins without arteries. Anything we can learn about buyers by studying them in isolation is of less interest or importance than that which we can learn about the broader buyer-supplier process, and that in turn is of less import than the process of buyer-supplier processes. By researching “supply” in isolation, I run the risk of making an error of logical typing; a reductionist nightmare likely to result in the very dehumanised, unwise explanations that I have criticised.

My only way out of this conundrum is to redefine supply management as something wider - the context of supply. This creates a more appropriate agenda for the research project and the thesis:

Strategic Supply: A Definition

The study of all non-trivial processes which effect, and are effected by, the relationships between people, their organisations and their environments.

Note: strategic supply is strategic here in the sense that it is important for the long-term survival of the human species

Here I indicate a field of study: A swampy ground to explore with great uncertainty looking for tentative insights. I indicate a framing of questions shrouded in ambiguity. I could improve the chances of getting an answer by limiting the scope of my inquiry, but I would then enter the reductionist nightmare and end up with narrowly correct, but practically useless answers.

Whilst I am a heretic, I should still try to be a good scientist, and a good scientist would need to define carefully some of the terms used in the definition above. First of all, what do I mean by “non-trivial processes”? I mean non-trivial in the sense in which it is used in formal logic and by philosophers such as C S Peirce (Peirce (1958)). Any non-trivial process is strategic, being related to the survival and development of the human species. I also use the term organisation. This word is a minefield of paradox. In one sense an organisation is a no-thing: It is a social

construct, a product of the collective imagination of a group of people. Yet we sometimes also use it as a signifier for a particular and in no way imaginary group of people. Scientifically and mathematically, organisation can be thought of as the emergence of a set of relationships. The most tantalising word of all in my definition and in my inquiry, is relationship:

Relationship: state or mode of being related

Relate: to narrate or tell; to demonstrate a connection between²⁰

So *relationship* is something about the connections we make through the stories we tell, and – moving up one level of logical type - the stories we tell about the stories we tell, or the connections we make between the connections we make.... It all seems rather unsatisfactory doesn't it? A modern riddle of the sphinx.

Readers will have noticed that in the process of broadening supply sufficiently for it to become a study worthy of humanity, I end up with a definition which could just as easily be a definition of Social Psychology, Sociology, Political Economy or History. There is a term in literature for this trick: it is a Trope. Through this trope, I end up making supply chain a branch of natural history which, however difficult it might be for an orthodox business theorist to swallow, is at least a consistent perspective throughout this Thesis.

Summary

“Relations among organisms... cannot be seen as wholly competitive lest essential ingredients of the fabric of living systems – especially social systems – be left out of our very description of nature”
Eldridge (1989)

Supply chain theory is important for the human species. It is important because the stakes are high. Supply chain decisions made by multinational corporations and governments effect – irreversibly – the lives of billions and the natural resources of the planet. Not only are the stakes high but the level of uncertainty is high also. The link between decisions and outcomes is non-linear and uncertain.

In the introduction to this chapter, I noted that my philosophical position influences my research agenda. It is now appropriate to say a little more about this.

Our supply chains currently present us with a combination of two circumstances – high stakes and high uncertainty, on a global scale. Funtowicz and Ravetz (1990) suggest that global challenges such as those presented by our supply chains, require a new kind of science: *post-normal science*. In post-normal science, quality replaces truth as the organising principle, and dialogue replaces expert pronouncements.

My research agenda is therefore a *post-normal inquiry*, where issues of *quality* and *dialogue* become particularly important.

Endnotes

¹ Cited in Wheatley (1992)

² McCulloch (1965)(Original work published 1961)

³ A Mind-Matter integration philosophy would place our minds (i.e. our phenomenon of mind, which you are now using to read this book) in our bodies, which is where most neurologists would put them too, despite their mechanistic educations. In contrast, a dualist would recognise the existence of the nervous system, yet put the phenomenon of mind into a separate category, unconnected with the neurons, classifying it as beyond our possible understanding and to be approached only through religious faith. As you can see, the dualist position turns out to be the wacky one. Nevertheless, I offer it due respect.

⁴ The view is not unique to Bateson: Plato, Plotinus, Saint Augustine and Lamarck had similar ideas.

⁵ Bateson (1979)

⁶ Or perhaps, humans tend to arrange patterns into hierarchies...

⁷ Bateson (The Logical Categories of Learning and Communication in Bateson (1973) pp280–308)

⁸ To try and explain very crudely, I think Bateson is suggesting that Learning IV is a *co-evolutionary* process.

⁹ A couple of technical comments about this learning spiral: Firstly, each cycle in the spiral can be thought of in terms of the “Kolb Cycle” of Concrete experience, Reflective Observation, Abstract Conceptualisation and Active Experimentation, although how this is translated beyond the lower spirals I am not sure. Secondly, Bateson makes the point that the spiral can sometimes get messed up, with pathogenic results: links can break or get tangled.

¹⁰ My view here is strongly influenced by Bateson, who expressed it in two key phrases: “Mental process requires circular (or more complex) chains of determination” and “The description and classification of these processes of transformation discloses a hierarchy of logical types immanent in the phenomena” Bateson, Mind and Nature (1979), p103 and p104.

¹¹ Whether humans have relationships, or relationships have humans, is a moot point, to which I will return later

¹² In passing, I should acknowledge that, here again, I am taking a philosophical position. It is a position commonly described as existential. I cannot demonstrate that it is true, any more than any philosophy can be shown to be “true”. What I can do is claim the consistency of this position with the flow of the text. No more and no less.

¹³ The roots of this theoretical approach (conversational disciplines) are in existential philosophy, particularly the work of Martin Heidegger. However, the terminology and descriptions are heavily influenced by Werner Erhard, then Tracy Goss and onward to a number of niche consultancies and training organisations. Erhard (born Jack Rosenberg) was a used car salesman who reinvented himself as a training guru in 1970's San Francisco. He is a highly controversial character and is described by many as a con-man and a crook. The training company he originally set up to promote his ideas, “est”, is often described as a cult with questionable ethics. Paradoxically, the conversational disciplines themselves seem to make a lot of sense. As is so often the case in history, it is not the saints who come up with the most interesting ideas. The descriptions in the text are based on Bolton (1998)

¹⁴ Later work in Lean Supply has moved toward a joint assessment of relationships by both buyer and supplier as explained elsewhere in the Thesis.

¹⁵ As evidenced extensively in the work of Polanyi, Shoter and Wittgenstein.

¹⁶ Similarly, there is no law of nature that ensures that purely because we have built and made ready enough weapons to destroy our species a thousand times over, we have also evolved the wisdom not to use them. Indeed, our species has already killed even more of our own through the testing of such weapons than we have through using them in war.

¹⁷ Xrefer.com. We could see these writings as early ethnographies: travellers' tales.

¹⁸ Monaghan and Just, 2000 p2

¹⁹ First two questions from Monaghan and Just, last set of questions from Carrithers

²⁰ Dictionary.com

**SECTION 3:
RESEARCH OBJECTIVES
AND APPROACH**

CHAPTER FIVE: CONFESSIONS OF A BAREFOOT EMPIRICIST: RESEARCH PHILOSOPHY AND APPROACH

Introduction: Barefoot Empiricism

Daughter: “What does *objective* mean?”

Father: “Well. It means that you look very hard at the those things which you choose to look at”

D: “That sounds right. But how do the objective people choose which things they will be objective about?”

F: “Well, they choose those things about which it is easy to be objective.”

D: “Do you mean for them?”

F: “Yes”

D: “But how do they know that those are the easy things?”

F: “I suppose they try different things and find out by experience.”

D: “So it’s a subjective choice?”

F: “Oh yes, *all experience is subjective.*”

D: “Which things do they leave out?”

F: “What do you mean?”

D: “I mean, subjective experience shows them which things it is easy to be objective about. So, they go and study those things. But which things does their experience show are difficult, so that they avoid these things? Which are the things they avoid?”

F: “Well, you mentioned earlier something called “practice”. That’s a difficult thing to be objective about. And there are other things that are difficult in the same sort of way. Play, for example. And exploration. So they don’t investigate these things. And then there’s love. And, of course, hate.”

Bateson (1973) p47

Cox (1997 p36) has criticised management theories for their poor philosophical foundation. He particularly targets the fad of benchmarking, noting that practices in one successful company are often adopted by others in the hope of similar success, without any rigorous explanation regarding why these practices were so successful in the first place, let alone whether they would transfer successfully to others.

Using language from political economy, Cox calls such practices *barefoot empiricism*. But in the world of the fully-human, an entirely objective position is both untenable and undesirable. I have explained in previous chapters that I take the position of observing supply chain behaviour as a branch of natural history. Even better, I should position my enquiry as ethology, which is both the study of behaviour in its natural habitat and the study of the evolution of the human ethos.

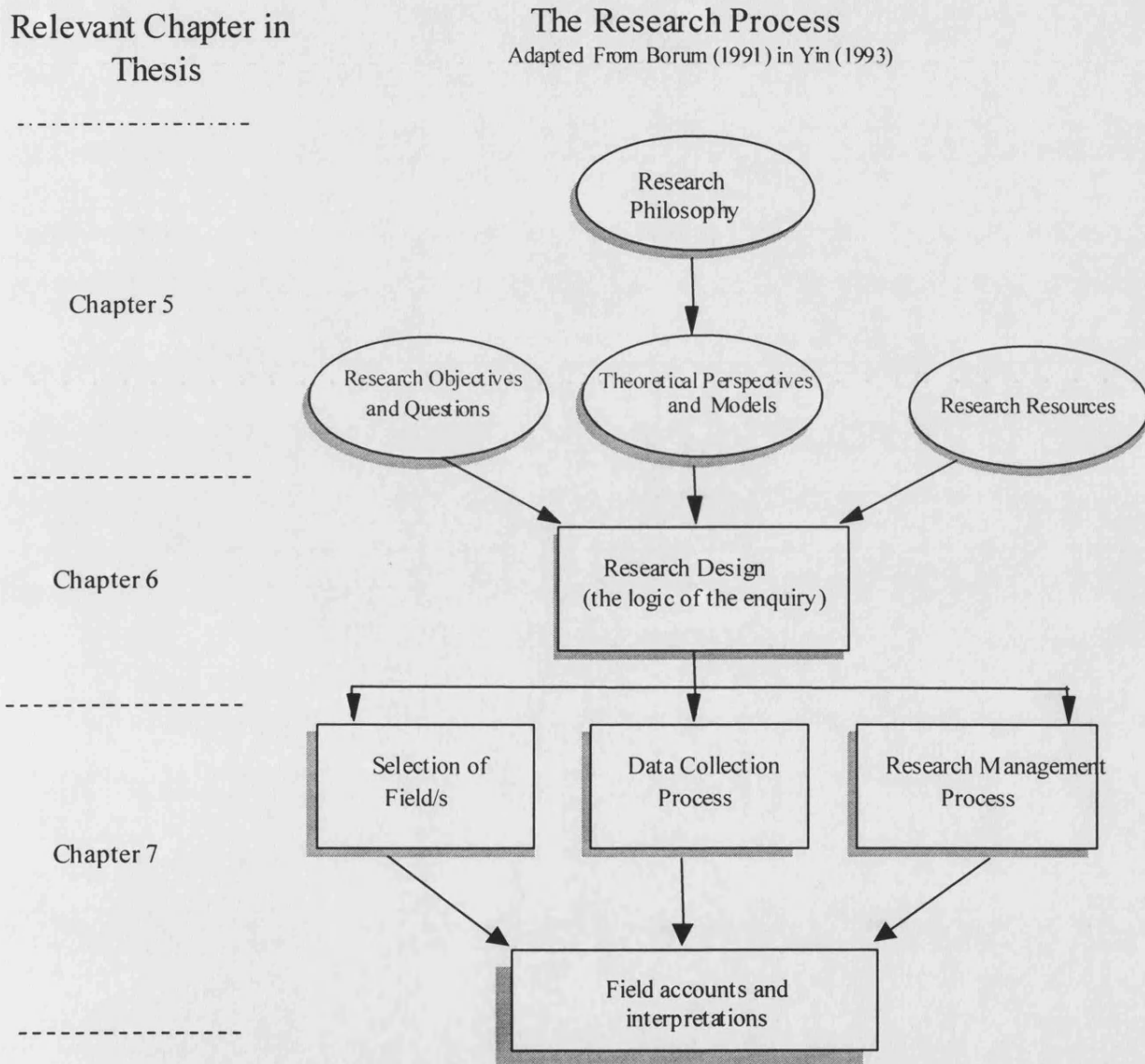
Ethologically, then, knowledge is “an activity which would be better described as a process of knowing” (Polanyi (1961)), and “knowing is effective action, that is, operating effectively in the domain of existence of living beings” and “all knowing is doing, and all doing is knowing.” (Maturana and Varela (1992)). All such action is, as Heidegger observed, social action.

So what of empiricism? Well, we should certainly be wary of fads and false generalisations, but the term empiricism is itself used ambiguously by philosophers. For some, it means that there is no reality, only appearances, whilst for others it is closely aligned to materialism. If, however, we take empiricism to signify a close relation between knowing and experiencing, then call me an empiricist and welcome to my confessions.¹

The Research Process

In this current chapter and the following two chapters, I outline the research philosophy and approach (this Chapter) how the research project was designed (Chapter 6) and how the field experiences were captured and interpreted (Chapter 7). Fig (14) shows how these chapters fit together to describe the overall research process of the thesis.

Fig (14) The Research Process



However, in some respects, this Section 3 of the Thesis: “*Research Objectives and Approach*”, is not constructed in an orthodox manner and therefore requires a few words of initial explanation - something of a “health warning” lest it otherwise lead to confusion for readers.

In this current chapter I describe how my research questions gradually emerged from a process of grappling with areas of interest, whilst they were still being influenced by elements of the existing, orthodox management and supply chain theories. I also outline here some tentative, initial theoretical frameworks that I had developed at the start of my inquiry. In Chapter 6, I describe my selection of an ethnographic methodology as my research approach, and in

Chapter 7 I make some comments about how I planned to apply the ethnographic method in practice. The aspects of these three chapters which could potentially lead to consternation for readers are as follows: Firstly, much of what I describe here as the theoretical framework was later either abandoned or significantly modified as the inquiry evolved over several years. Secondly, although I describe my choice of ethnographic method, I do not explicitly relate this back to the earlier chapter, Chapter 4, in which I made some rather strong statements about my post-normal research agenda, encompassing some broad general principles. There *is* a link between my agenda and my choice of method, but it is largely implied, and I assume rather a lot of my readers.

Having warned readers of these potential irritants, I shall now continue with an outline of the overall research philosophy.

The Overall Research Philosophy

The degree of PhD is awarded in British Universities for an original contribution to knowledge. As Phillips and Pugh (1987) point out, originality has never been sharply defined in this context, varying between disciplines and institutions. The definition of knowledge continues to attract academic debate, as it has since the Greeks introduced the precursors of today's universities over two thousand years ago. The business of writing and awarding PhDs is therefore subjective.

Current management and social sciences texts identify two broad research philosophies. These are the positivist paradigm, traditionally applied in the natural sciences², and the alternative phenomenological (or naturalistic) paradigm: Table (7) gives a summary. This is a simplified taxonomy compared to those of Stacey and Reason which I used in Chapter Three, but it provides a clear distinction for the purposes of this Chapter.

Table (7) Key Features of Positivist and Phenomenological Paradigms
From Easterby-Smith, Thorpe and Lowe (1991)

	Positivist Paradigm	Phenomenological Paradigm
Basic Beliefs:	The world is external and objective	The world is socially constructed and subjective
	Observer is independent	Observer is part of what is observed
	Science is value-free	Science is driven by human interests
Researcher Should:	Focus on facts	Focus on meanings
	look for causality and fundamental laws	try to understand what is happening
	reduce phenomena to simplest elements	look at the totality of each situation
	formulate hypotheses and then test them	develop ideas through induction from data
Preferred Methods Include:	operationalising concepts so that they can be measured	using multiple methods to establish different views of phenomena
	taking large samples	small samples investigated in depth over time

The two paradigms represent different views of what knowledge is, and how the researcher should go about "getting knowledge". In practice, there are a number of intermediate philosophies between these extremes. Any particular research project is unlikely to fit neatly into either the left or right hand column. Easterby-Smith Thorpe and Lowe (1991) believe that the two sets of basic beliefs are "quite incompatible" as philosophies, but mixed or intermediate methods are used by researchers.^{3 4} Hammersley and Atkinson (1995) note that positivism has become "little more than a term of abuse amongst social scientists"⁵, but within management theory it is alive and well, and many texts take a positivist view (e.g. Yin (1993), Phillips and Pugh (1987)).

Positivism

Descartes was a key influence on the development of a positivist philosophy. The element of his philosophy referred to as dualism, establishes a clear differentiation between mind and body, subject and object, the knower and the known ((Descartes (1637)).⁶ Thus, those seeking knowledge should :

"reduce involved and obscure propositions step by step to those that are simpler, and then, starting with the intuitive apprehension of all those that are absolutely simple, attempt to ascend to the knowledge of all others by precisely similar steps" (Descartes (1701)).

Shumacher (1978) described this as "a programme conceived by a mind both powerful and frighteningly narrow."

Newton (1687), whilst endorsing the positivist perspective, made it clear that he was only describing physical phenomena, not explaining them. Descartes' approach to a philosophy of knowledge was further developed by Comte (1853,p126):

"All good intellects have repeated, since Bacon's time, that there can be no real knowledge but that which is based on observed facts."⁷

Wittgenstein (1922) criticised positivism, saying:

"The whole modern conception of the world is founded on the illusion that the so-called laws of nature are the *explanations* of natural phenomena". (My italics)

He went on to say that if all the problems of science were answered, the problems of life would not have been touched: a comment borne out by issues facing the scientific community today.

A positivist research methodology aims to establish links between events, using observation and controlled experiment. Certain events in time and space can be claimed to be associated with other events or facts. But experiments have become more complex and the outcomes are increasingly mysterious. For example, as quantum mechanics develops, it seems that one set of impenetrable questions is removed, only to reveal a further paradox, and no amount of positivist enquiry can help us to decide what we should do with the outcomes of scientific research, such as nuclear weapons or genetic engineering.

Phenomenology

Peirce (1931/1958) was a notable challenger of positivist certainties, who recognised inquiry as a social process. Husserl (1900/1901) influenced many philosophers and others to see the world as socially constructed, and Heidegger (1927) took the argument further by denying the relevance of the Cartesian subject-object relationship, seeing reality as created in a stream of interaction between ourselves and our environment. Our feelings and moods, he suggested,

should be seen as real also, and in that sense they are objective. Human action takes place within a "space of possibilities" created by the culture (or cultures) of which we are part. This view finds resonance with the realities of management and business. Ambiguity is the norm. Locke captured the problem:

"For where is the man that has incontestable evidence of the truth of all that he holds, or of the falsehood of all he condemns, or can say that he has examined to the bottom all his own, or other men's, opinions? The necessity of believing without knowledge, nay often upon very slight grounds, in this fleeting state of action and blindness we are in, should make us more busy and careful to inform ourselves than constrain others." (Locke (1689))

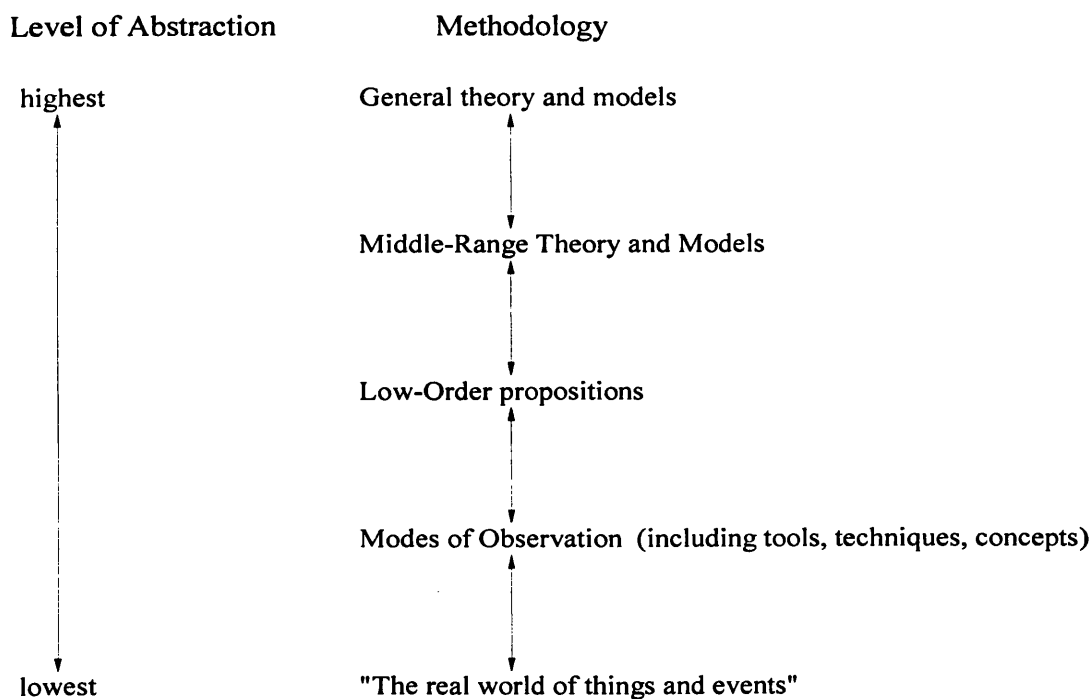
In recent decades, there has been considerable development of the application of phenomenology to management research. Important contributions have included Action Research (Reason (2003)), Naturalistic Inquiry (Lincoln and Guba (1986)) and Human Inquiry (Reason (1988)). A longer tradition of research methods in the phenomenological paradigm exists in the field of Ethnography e.g. Morgan (1877). Whyte (1943) built a bridge between the original applications of ethnography and its use in contemporary social sciences.

Type of Reasoning Applied in the Research

A further contrast is drawn in research literature between inductive and deductive reasoning. Inductive reasoning starts with particulars and gradually builds up to general theories. Deductive reasoning starts with a general theory or model and then uses this to direct the search for supporting information.

The following diagram from Pelto and Pelto (1978) illustrates that there are several potential levels in a research methodology, and there can be an iterative loop at each stage. It can be seen from this perspective that research can, and should, be both inductive and deductive.

Fig (15) The Domain of Methodology (Pelto and Pelto (1978))



An approach of combining induction with deduction has been recommended by many: Bateson (1979), for instance, calls it a “pincer movement”, whilst Cox (1997) identifies it as “abstractive reasoning”. We need to exercise extreme care however, not only regarding the “truths” revealed by induction and deduction separately, but also in regard to their combination. It seems that even a pincer movement does not pin down the “truth”.

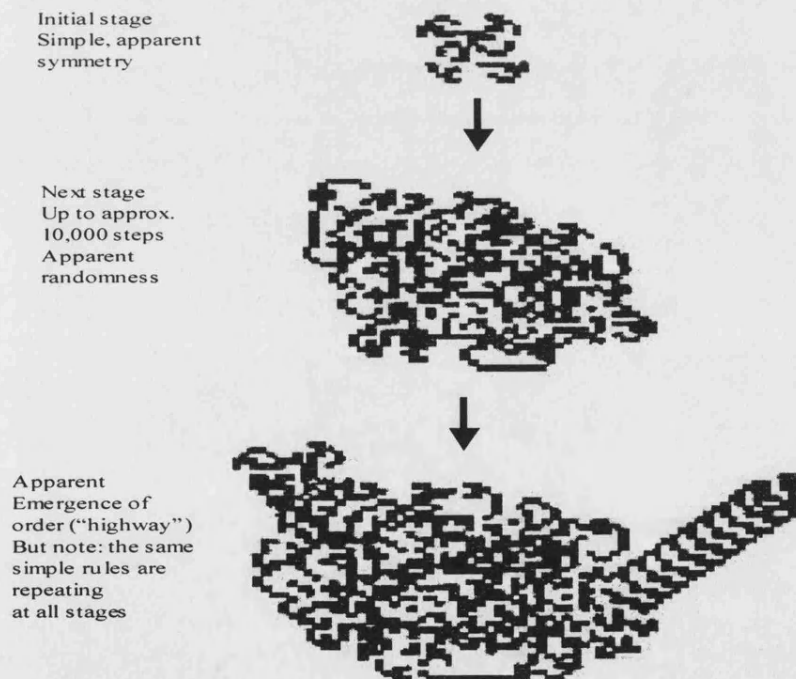
The problems of induction, deduction and combinations of the two, are well illustrated using the example of “Langton’s Ant”, a cellular automaton famous in complexity theory (Langton (1986)). The Ant follows a set of rules, which are described by Stewart (1997) as follows:

“The ant moves either North, South, East or West on a square grid of black and white cells, following three simple rules:

1. If it is on a black cell, it makes a 90 degree turn to the left.
2. If it is on a white cell, it makes a 90 degree turn to the right.
3. As it moves to the next square, the one that it is on changes colour from white to black, or the reverse.”

These are very simple rules, but, as is typical with repeated iterations, they produce unexpected outcomes. For a long time (about ten thousand iterations) the Ant wanders around in a concentric pattern. Then it suddenly heads North-East and keeps going, forming a “highway”, as shown in Fig (16).⁸

Fig (16) Langton’s Ant



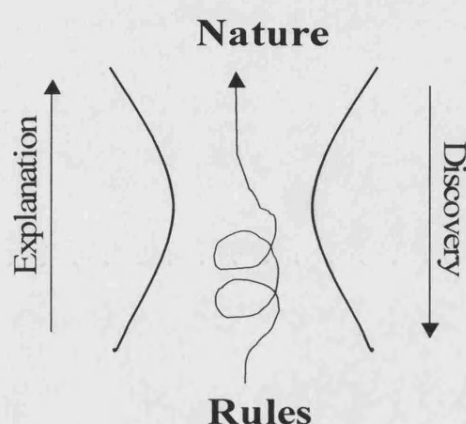
The only way to discover that the ant is going to form a highway is to run all the steps. Various different versions of the ant have been created, with slight modifications of the rules, but it seems that it *always* builds a highway, although some versions cycle for millions of iterations first.

Why is this significant? Stewart (1997) explains:

“Here we have a high level simplicity [i.e. an emergent behaviour] that seems to be universal, but which cannot currently be deduced from the Theory of Everything for the system, even though we *know* the Theory of Everything in this case. So here the theory of everything *lacks explanatory power*: it predicts everything but explains nothing.

Stewart, a mathematician, working with Cohen, a developmental biologist (Cohen and Stewart (1994)), uses Langton’s Ant as evidence that induction and deduction *do not join up*. The claim begins with a simple diagram of the process of scientific explanation, Fig (17), below:

Fig (17) The Process of Scientific Explanation, using mental funnels
(From Cohen and Stewart (1994))

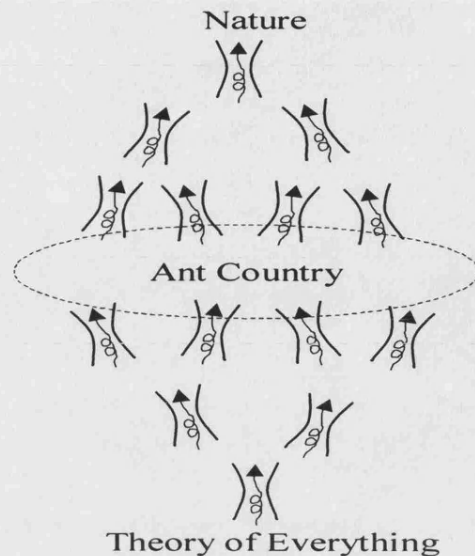


The funnel represents the way we “look down” from natural phenomena to “see” underlying rules. Stewart explains that this has been a key scientific process for centuries, coming into particular prominence with the work of Newton.

The search for the deepest of underlying theories, a “Theory of Everything” has continued, but in many cases, what has emerged has been a *reductionist nightmare*: the funnels seem to just keep branching in different directions. Stewart explains as follows:

“Top-down analysis proceeds from nature and looks down mental funnels to see what lies inside. Bottom-up analysis proceeds from a Theory of Everything and ascends levels of description by deducing logical consequences of those laws in a hierarchical manner. I maintain that the top and bottom *do not meet*, and this is why emergent phenomena appear to transcend the systems that gave rise to them. Cohen and I call this “no man’s land” between top and bottom “Ant Country.”
Stewart (1997) p379

This is shown diagrammatically in Fig (18):⁹

Fig (18): Ant Country (from Stewart (1997))

What I think this tells us is the following:

1. We should treat inductive reasoning with caution
2. We should treat deductive reasoning with caution
3. We should treat combinations of both inductive and deductive reasoning with caution

Where does that leave me in terms of the type of reasoning used in this Thesis? Well, it might suggest scepticism, but even scepticism has fundamentalist connotations. Better words would be caution and circumspection. I will embrace all of these forms of reason on the basis that they are all we've got, but will not take any of them more seriously than they deserve.

Language and Meaning

A branch of philosophy has developed which pays special attention to the role of language in reasoning. Heidegger (1927) recognised that the use of language in a particular culture and at a particular time would to some extent shape the thinking of individuals and groups. Wittgenstein was concerned with the importance of language particularly from the viewpoint that language is socially constructed, and since we use language in reasoning, the exact meanings we attribute to words can easily lead to misunderstandings.

Koestler made a related point:

"The prejudices and impurities which have become incorporated into the verbal concepts of a given "universe of discourse" cannot be undone by any amount of discourse within the frame of reference of that universe. The rules of the game, however absurd, cannot be altered by playing that game."

"Among all forms of mentation, verbal thinking is the most articulate, the most complex and the most vulnerable to infectious diseases. It is liable to absorb whispered suggestions, and to incorporate them into the code. Language can become a screen which stands between the thinker and reality. This is the reason why true creativity starts where language ends." Koestler (1965) p175.

Given my assertion, in Chapter 3, that supply chains can be viewed as webs of conversations, this perspective becomes important.

The Underlying Philosophy of this Research

The Thesis applies a phenomenological paradigm. Within this, it challenges some of the basic philosophical assumptions which underpin most orthodox management research. I shall briefly restate here some of the assertions developed in previous chapters. These will be developed further throughout the Thesis:

- Current management theory, broadly speaking, dehumanises.¹⁰ It posits a world without wisdom, a world of “rational fools”. And through an unfortunate hermeneutic cycle, it helps bring such a world into being.
- Our theories of “supply chains” follow this hapless agenda: Focused on their imagined and legitimised rational chains, they overlook the emotionally charged, unpredictable, conversational, social webs in which human behaviour takes place.¹¹
- Our legitimate management theories are blind to the nonlinear nature of our social world. They try to shoe-horn these important discoveries into an outdated Newtonian hegemony.
- Clinging to the commandments of their Trusels, management theorists move the human species toward unnecessary danger.

In this context, I argue the case for a different, heretical, type of management research. As explained in Chapter 4, the underlying philosophy of this research would be guided by three principles:

- We should research living, fully-human people,
- Embedded in a biological, creatural, social world
- Recognising that our work is crucial to the survival of the human species

The Research Objectives and Questions

“It is monstrous – vulgar, reductionist, sacrilegious – call it what you will – to rush in with an oversimplified question. It’s a sin against all three of our new principles. Against aesthetics and against consciousness and against the sacred.” Bateson (1979) p213

The development of the research questions was an iterative process. The initial research questions are described below, followed by an explanation of how these evolved into a final set of questions used in this Thesis.

Initial Groping and Questioning as the Research Began

The original research topic, registered with the Board of Studies, was described as: “Suppliers in the Product Creation Process: The Challenges and Implications of Increased Supplier Involvement in New Product Development.” The early involvement of suppliers in product development had been identified in the literature as an important success factor for companies (Schonberger (1986), Lamming (1993)).¹² My interest was in the management problems that this presented. Initial research questions were:

- How could companies go about the process of getting their suppliers to contribute to product development?
- How could the suppliers gain access?
- How could problems of trust, intellectual property rights and confidentiality be overcome?
- What tools and techniques could be developed to facilitate the process?

These questions guided a literature review, which concentrated on the following themes:

- The Processes of New Product Development and Innovation
- Individual and Group Creativity, particularly in a work setting
- "Learning Organisations"
- New Organisational phenomena such as Networks, Supply Chains and the "Lean Enterprise"
- Strategic Purchasing

The output from the literature review, including an emerging conceptual framework, was then developed further into a detailed research report and a paper which was presented at the fourth Annual Conference of the International Purchasing and Supply Education and Research Association (IPSERA). Following feedback at the conference and further work, the paper was published in the European Journal of Purchasing and Supply Management (Price (1996)).

The Research Questions which Finally Emerged

The process of reflecting on the results of the literature review and their implications for the planned research resulted in some changes in the research questions, and also in the development of an approach which differentiated my work from other research into supply chains. This is evidenced in the title used for the IPSERA paper, "Innovation in Supply Chains: An Anthropological Perspective", and is more pronounced in the paper submitted to the Journal: "The Anthropology of the Supply Chain: Fiefs, Clans, Witch-Doctors and Professors".

Why did I shift my emphasis from product development to innovation? Where did the anthropological perspective come from? The answer to the first question is quite straightforward. It was clear from the literature that the innovation process is crucial throughout an organisation. Developing new products is important, but creativity needs to be successfully applied to all the core processes of an organisation. Similarly, the key players were not just suppliers, but all appropriate members of a supply chain.¹³ But why I became interested in the *anthropology* of the supply chain might require a little more explanation.

A short extract from the introduction to the conference paper will help to illustrate:

"Organisations in the west have learned the importance of organising their businesses into cross-functional teams, focused on key business processes. In the future, even this will not be enough. Successful businesses will create value by implementing innovations across organisational boundaries: "Cross-functional" teams will become "cross-organisational" teams. Supply Chain Management will need to nurture successful innovation within these cross-organisational teams. The fundamental challenges are social rather than technical, involving issues of trust, co-operation, competition, power and politics. As a result of this, the roles and relationships required for best-practice supply management are changing." Price (1995)

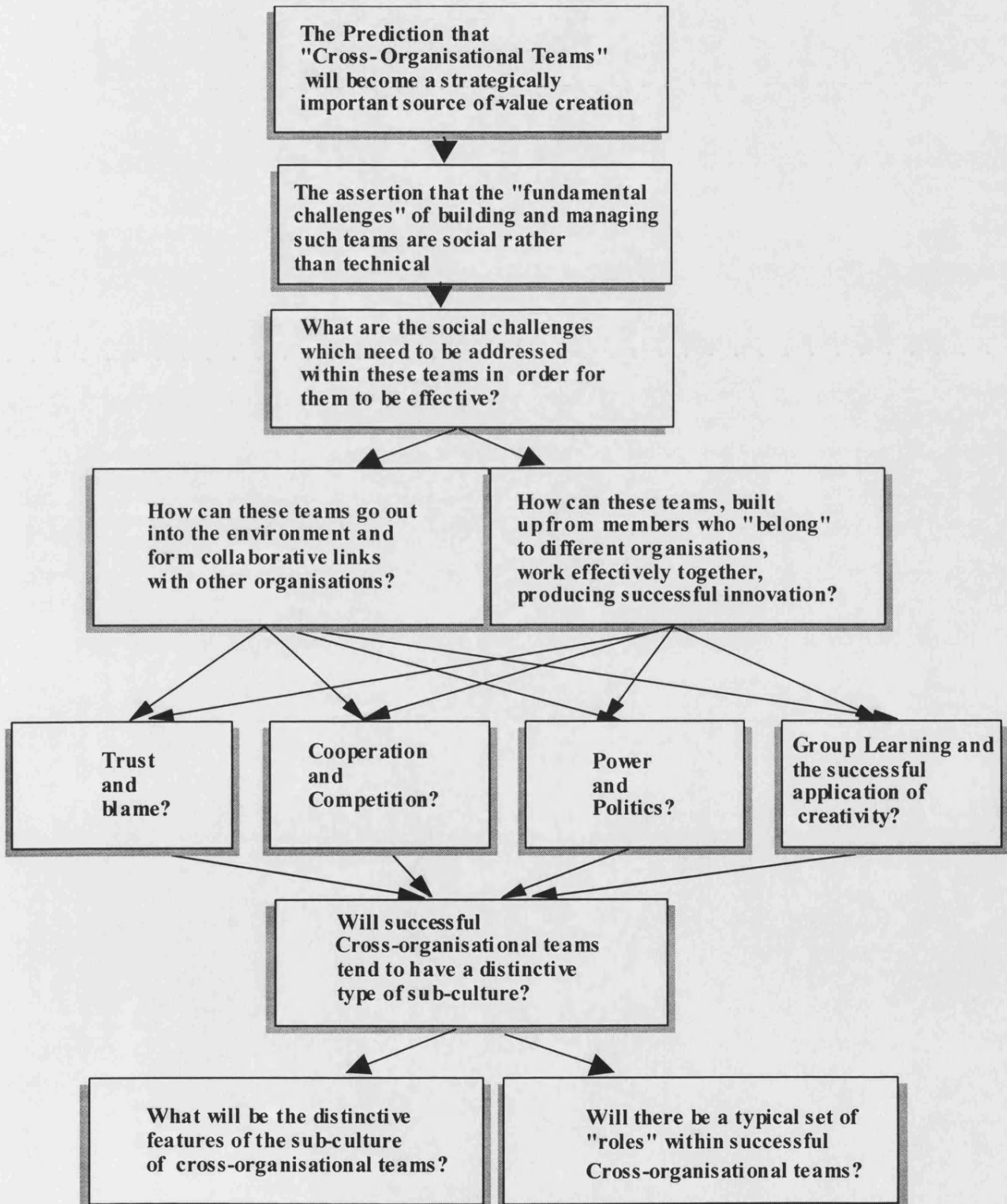
The "*cross-organisational team*" was a term which I introduced to the literature. The concept is implied in the writings of, for example, Lamming (1993), Womack and Jones (1994) and Kanter (1989), but is not extensively explored.¹⁴ The reasoning behind the assertion that the fundamental challenges in building successful cross-organisational teams are social, is developed in the paper. Lamming (1993) expressed similar concerns, but left them relatively unexplored. My paper attempted to put these concerns into context, identifying the importance of roles, relationships and cultures:

"When we see the fundamental challenges of partnerships in the supply chain in this light, it becomes clear that these are the same social challenges that have faced humankind for several thousand years. Humans deal with the challenges of communication, co-operation and competition by developing cultures. Within these cultures, roles and relationships emerge, in order to maintain the structure and function of the organisation. Looking at the innovative organisations of the 1990's in this way, provides an insight into how such organisations might be managed." (Price (1995))

The initial development of my research questions can therefore be considered as a deductive process, founded on number of assumptions or assertions.

A diagrammatic outline of the *context* of the research questions is shown in Fig (19). This progresses rather like a flow chart, from the more general context at the top of the diagram, to the more specific and particular at the bottom.¹⁵

Fig (19) The Context of the Research Questions



The context of my research questions was therefore an inquiry into how collaborative relationships between organisations could be “managed”¹⁶. Given this context, the research questions for this Thesis are as follows:

The Research Questions

1. How can groups of people work collaboratively together as cross-organisational teams when they have some shared interests and some differences?
2. How can sufficient trust be developed in order that collaboration might flourish?
3. How can the natural human tendency to apportion "blame" be addressed?
4. How can creativity be nurtured in such ambiguous circumstances?
5. How can the unavoidable realities of power and politics be addressed?
6. Will successful cross-organisational teams have a distinctive sub-culture?
7. What will be the distinctive subculture of cross-organisational teams?
8. Will there be a typical set of roles in a cross-organisational team?

In addressing these questions, I explore techniques and concepts from the discipline of anthropology, where concepts of roles, relationships and cultures were initially developed and researched.

Why the Research is Important

There are two reasons why this research is important. The first reason is the one that originally occurred to me in preparing for the research. The second reason emerged during the course of the research process.

The first reason is as follows:

A clear explanation of the strategic importance of collaborative relationships between organisations is presented by Reve (1990). Reve takes Porter's "five forces" model of the arena of strategic competition and turns it "inside out". No longer, he argues, is competitive advantage about outsmarting suppliers (or customers, or competitors). Companies must know when, and how, to collaborate.

If the commercial promise of such alliances were to be realised, then companies must be able to understand some of the difficulties that they might experience in forming and managing cross-organisational teams. Having anticipated and understood the challenges, they would need to develop strategies for successful action

This was my original reasoning regarding why my research was important.

My second reason can be expressed more succinctly: I realised that *The research is important because it raises issues which are important to the survival of the human species*

The Development of Appropriate Theoretical Perspectives and Models

A Review of Relevant Literature, identifying Key Contributions

A literature review was carried out, and further sources were consulted throughout the research. It is difficult to select a small number of references as key, since the research field is new and a broad conceptual background is required. However, a small selection of work which was influential is outlined in Table (8) below.¹⁷

Table (8) Examples of Literature Sources

Subject	Authors
Business Strategy	Burt, Coleman, Hamel, Hirschmann, Jarillo, Johnson & Scholes, Lamming, Prahalad, Porter, Reve, Snow, Miles and Coleman, Stacey, Thorelli, Whittington, Womack & Jones
Chaotics/Non-Linear Dynamics/Paradox	Bak, Butz, Capra, Fuller, Gleick, Stacey,
Communication/Language/Hermeneutics/Dialogue/Information Exchange	Boisot, Boisot and Child, Chomsky, Dilthey, Polanyi, Shannon, Wittgenstein
Cooperation/trust/mutuality/integration/negotiation	Bateson, Child, Fukuyaman, Haas, Handy, Lax, Raiffa, Rubin & Brown, Sako, Shapiro
Cosmology/Quantum Mechanics/theoretical physics	Bohm, Capra, Gleick, Hawking, Heisenberg, Von Neumann
Creativity/Innovation/Learning/Knowledge	Allen, Amabile, Argyris. Bateson, Boisot, Brown, Bessant, Burns & Stalker, Chomsky, Crane, Csikszentmihalyi, Foucault, Freeman, Ghiselin, Habermas, Hall, Henry, Kanter, Koestler, Lave & Wenger, McKenna, Morgan, Nonaka, Polanyi, Rothwell and Zegveld, Runco & Albert, Senge, Schumpeter ,Taylor, Twiss, Wertheimer, Wheelright and Clark
Cultural Theory/Social Theory/Social Behaviour/Anthropology	Bakhtin, Barthes, Bate, Bateson, Blumer, Bohm, Bolton, Bourdieu, Carrithers,, Deal and Kennedy , Douglas, Durkheim, Evans-Pritchard, Foote-Whyte, Foucault, Frost et al. Goss, Geertz, Giddens, Goffman, Habermas, Hampden-Turner, Kuper, Levi-Strauss, Lewis, Malinowski, Mauss, Orr, Parsons, Watson, Weber, Weick
Economics, TCA, Post-TCA	Aoki, Axelrod, Baumol, Boulding, Coase, Ghoshal and Moran, Williamson
Epistemology	Bateson, Bois, Chomsky, Kuhn, , Korzybski, Maturana and Varela, Popper,
Evolution: genetic, cultural, social	Barfield, Bateson, Darwin, Dawkins, Lumsden, McShea
Intersubjectivity, Social constructionism	Gergen, Reason, Sarbin(narrative), Stacey
Mind-matter integration, monistic ontology	Bateson, Blake, Fuller, Taoism
Negotiation	, Fisher & Ury, Gulliver, Kenedy, Nierenberg
Operations Management/Supply Chain/Strategic Supply	Caldwell, Carlisle & Parker, Choi, Cooper, Cox, Carlisle & Parker, Hall, Hakansson, Harland, Hines, Jarillo, Knight, Lamming, Rackham, Reve, Russill, Schonberger, Steele, Syson, Spekman, Thorelli, Van Weele, Womack & Jones
Organisational behaviour/culture	Bate, Bernard, Carlisle & Parker, Cyert & March, Deal & Kennedy, Dooley, Hurst, Stacey
Phenomenology	Heidegger, Hegel, Reason,
Philosophy	Augustine, Bateson, Berkeley, Boulding, Russell, Blake, Bohm,Buddhism, Descartes, Hegel, Heidegger, Heraclitus, Jung, Kant, Lovejoy, Neitzsche, Pascal, Plato, Santayana, Sartre, Spinoza, Taoism, Wittgenstein
Power/Politics/Conflict	Debono, Kakabads, Mangham
Psychology/ brain Sciences	Calvin, Clarkson, Damasio, Freeman, Freud, Greenfield, Haken, Jung, Laing, Rosenfield, Von Neumann
Teams/Quasi Firm	Alvesson and Lindkvist, Belbin, Carlise and Parker, Katzenbach, Lamming, Ouchi,

In developing an understanding of strategic issues relating to purchasing and networks, the following references were particularly helpful:

Womack and Jones (1994), Lamming (1993), Thorelli (1986), Jarillo (1988)(1993)
Spekman et al (1994), Snow, Miles and Coleman (1992), Reve (1990), Hakansson (1982)

In investigating the sources of creativity and innovation:

Koestler (1964), Kanter (1989), Allen (1977), Crane (1972), Rothwel and Zegveld (1985)
Freeman (1982)

In developing an anthropological perspective and an insight into the importance of teams and related issues

Belbin (1981) and (1993), Alvesson and Lindkvist (1993), Ouchi (1980) (1982)
and Carlisle and Parker (1989)

In developing a theoretical framework, which includes the "Nature of Information Exchange" and a typology of organisational sub-cultures, I was influenced by Boisot (1987) and Boisot and Child (1988)

On the topic of "Learning Organisations" I found an article by Huber (1991) particularly helpful.¹⁸

My literature review covered both anthropology texts and business texts relating to organisational culture. Some of the texts used to gain an understanding of the subject were:

Lewis (1976), Carrithers (1992), Frost et al (1991), Kuper (1988) and (1992)
Bate (1994), Hampden-Turner (1994), Deal and Kennedy (1982)

The messages drawn from the literature, and their application to my research interests, are detailed in Price (1994), (1995) and (1996). Further detail, including full reference information for all the literature sources in Table (8) is available in the bibliography.

The Type of Theory used in the Research

Four types of theory are identified by Nachmias and Nachmias (1982). These are: Ad hoc classificatory, taxonomies, theoretical systems and conceptual frameworks. Ad hoc classificatory theories identify similarities in concepts in order to group them into categories. Taxonomies¹⁹ organise concepts onto hierarchies. Theoretical systems develop interrelated propositions in order to arrive at a relatively complete explanation of phenomena. Conceptual frameworks place categories within broad propositions. The type of theory which I have used is a conceptual framework, which aims to develop a broad description of a range of interconnected phenomena.

The Conceptual Framework for the Research (The "Thesis")

"Foreshadowed Problems"

"Good training in theory, and acquaintance with its latest results, is not identical with being burdened with "preconceived ideas". If a man sets out on an expedition, determined to prove certain hypotheses, if he is incapable of changing his views constantly, and casting them off ungrudgingly under the pressure of evidence, needless to say his work will be worthless. But the more problems he brings with him into the field, the more he is in the habit of moulding his theories according to facts, and of seeing facts in their bearing upon theory, the better he is equipped for the work. Preconceived ideas are pernicious in any scientific work, but foreshadowed problems are the main endowment of a scientific thinker, and these problems are first revealed to the observer by his theoretical studies". Malinowski (1922) pp8-9

My approach to the research was not to start with hypothesised "answers" to the research questions and then try to either prove or disprove them. Rather, I developed tentative description of the types of cultures, roles and relationships which one might expect to see in successful, innovative organisations. This was a way of framing questions - Malinowski's foreshadowed problems. The framework was based on new combinations of existing theories, findings from my own experiences and those of others, and deductions and interpretations of the current body of knowledge. The descriptions that I developed were an interrelated set of models. But to set out to conclusively prove or disprove these models, within the timescale and resources available, was impractical²⁰.

As Bate explains:

"... a strategy for managing or changing culture is therefore not a "tool" or "method" - tools need something more concrete than culture to work on - but a way of thinking about organisation."²¹
(Bate (1994))

Similarly, the conceptual framework which I developed was not a hypothesis against which I intend to "test", but rather a "way of thinking about" the management of cross-organisational teams.

An Outline of the Original Conceptual Framework for the Research (1996)

The detail of the original conceptual framework is published in Price (1996). The following paragraphs outline some of the key points and give a flavour of the theoretical approach

The research recognised that the business environment is increasingly unpredictable. As a result of this, the application of the knowledge and creativity of the workforce may be becoming a critical success factor in many organisations. Previous research had revealed that productive innovation is often a social process - the common notion of the creative eccentric, working alone, is the exception rather than the rule. Innovation within a group is facilitated by differences between the members of the group - in terms of their thinking styles, training, background and personality. The driving force of organisational creativity, and business success, might therefore be seen as innovative, cosmopolitan teams.

Theories about learning organisations suggested that such organisations should have an emphasis on group goals and norms, and be mutually supportive in order to nurture creativity.

Theory relating to business networks and customer-supplier relationships added another dimension. It may not be merely the innovative, multi-faceted group within a single organisation that is crucial to success. Rather, value may be created at the interfaces between organisations.

My interest started with the identification of this important group: the cross-organisational team. How could such a team function? What would determine its success? How could it be managed?

My focus was on the social challenges within such a team. Little had been written about this, but there were clues to be found in the work of Ouchi (1980) and Boisot (1987). In particular, a form of social group defined as a "Clan" (Ouchi (1980)) seemed important for the successful integration of small teams. The determinant of business success could therefore be the "cross-organisational team", with members from collaborating organisations working together.

Developing the ideas of Boisot and Jarillo (1993), I suggested a model for categorising groups based on the nature of information exchange, the type of relationship, and the legal form of the organisation. Within this framework, four cultural styles were identified: Fief, Clan, Bureaucracy and Market. I suggested that different styles and levels of learning would occur in different cultural settings. Fig (20) shows this diagrammatically.

Fig (20) Culture and Learning

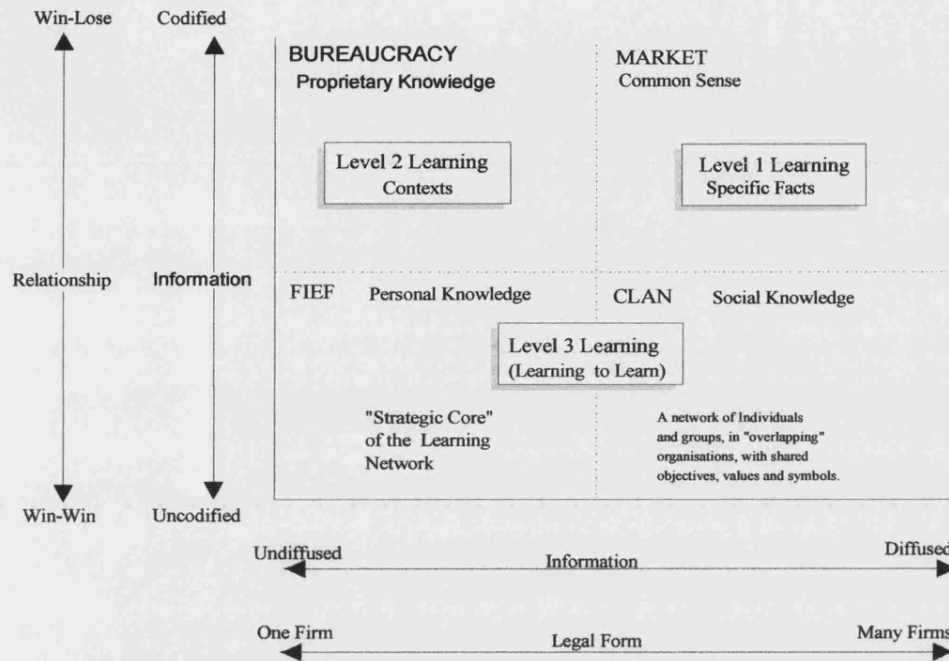
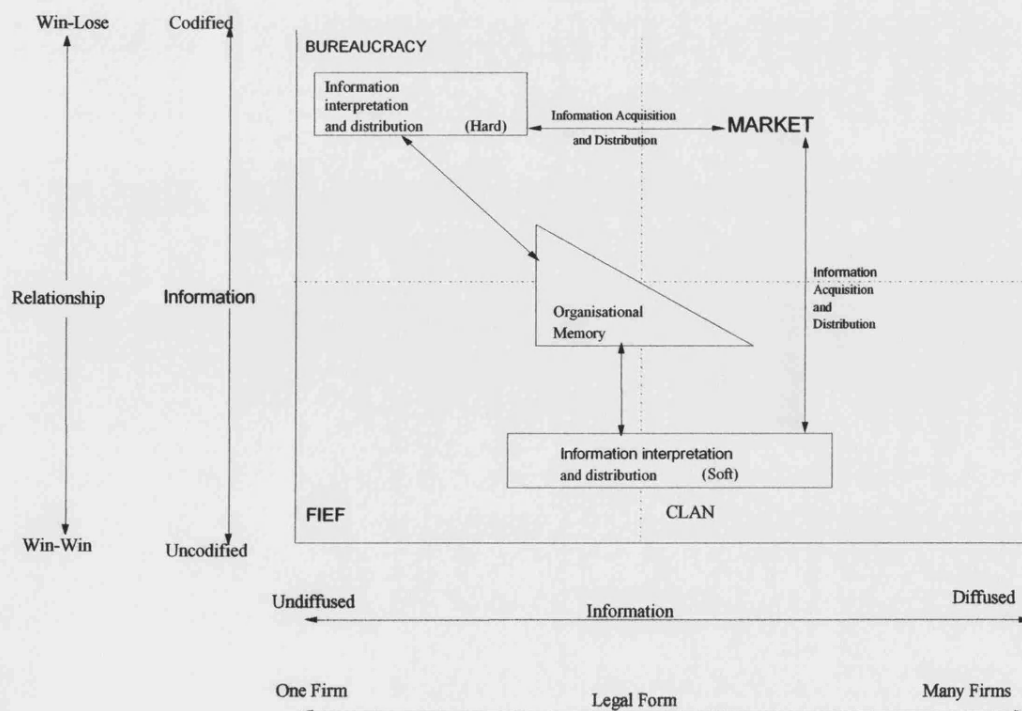


Fig (21) illustrates how the different sub-cultures could play different roles in order for learning to take place within a network.

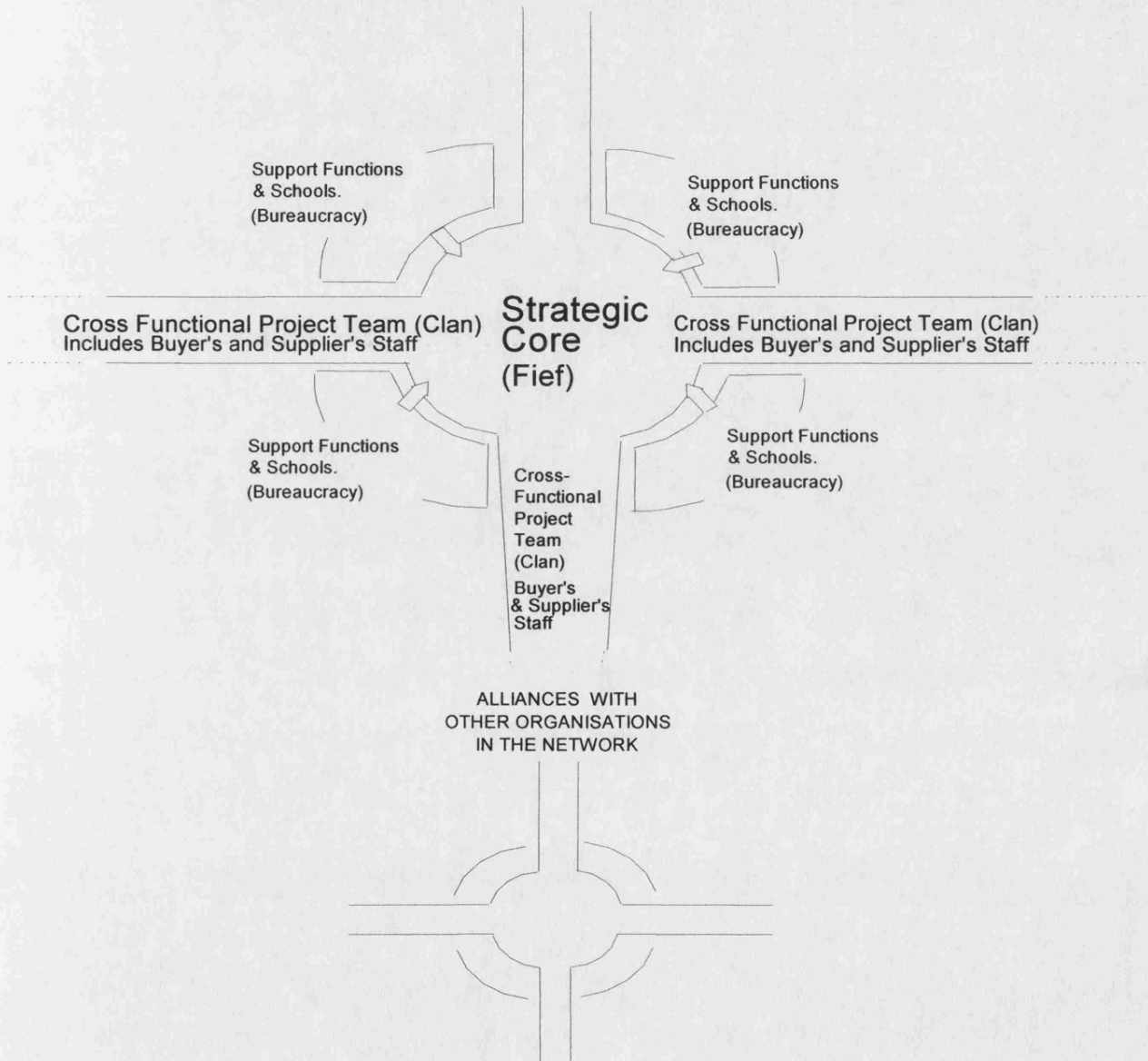
Fig (21) Network Learning: A Cultural Perspective



These models proposed that the exchange of relatively "uncodified", subjective, information was key to the development of shared values within a team, and that such exchanges were also important for learning and creativity.

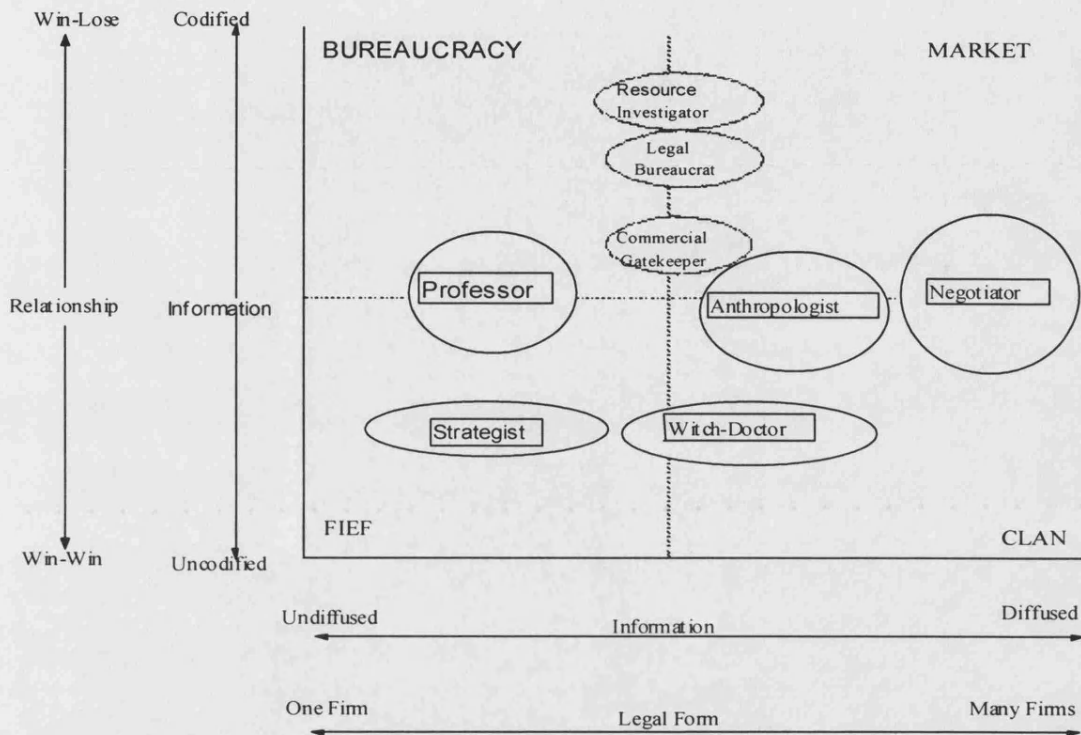
Viewing a particular organisation as a "node" within a network, and applying the cultural perspective developed in the previous figures, an "organic" model of an innovative organisation was proposed as shown in Fig (22).

Fig (22) A Cultural Model of an Innovative Organisation



These roles can be placed within the cultural framework as shown in Fig (23).²²

Fig (23) Emerging Purchasing Roles



The Strategic Core, the Support Functions and the Cross-Organisational project teams, would tend to have particular "cultural settings" (Fief, Clan and Bureaucracy). Developing a view of the role of "purchasing" in this context led to a recognition that purchasing would need to be managed as a process rather than a function, with contributions from different sub-cultures within the network. Drawing on an established practice in anthropology of the use of metaphors, I suggested a number of new "roles" which would be necessary in order for purchasing to be strategically effective within this new environment. These were:

Industrial Anthropologist

This role would be concerned with understanding the norms, values, attitudes and beliefs of suppliers in the network, and those of potential new suppliers. It would be necessary to make judgements about how elements of culture might interact where organisational boundaries overlapped. The task could be to find "compatible" cultures, rather than "similar" cultures.

Witch Doctor/Priest

The Purchasing process would need to extend to managing certain "symbolic" activities, in order to support emerging relationships. The role might include a "pastoral" aspect of reinforcing certain beliefs and values (and perhaps taking some confessions), "becoming a key player in the process of nurturing and managing internal and external relationships" in which purchasing professionals "articulate and clarify the firm's vision and mission that is shared with external constituents." (Spekman et al (1994))

Professor

In a learning organisation, one of the roles might be "Professor". But this should not be only a pedagogic role. The aim, in conjunction with other members of the management team, would be to facilitate higher levels of learning within cross-functional teams. Only if such learning was successfully facilitated would the organisation maintain its awareness and be prepared for innovations and transformations.

Strategist

The final "new purchasing role" was that of strategist - the "Network Architect". Organisations would attempt to design their network at the strategic level. This role would contribute to decisions regarding:

- To what extent the organisation can position itself as a strategic "hub" or "core" within certain networks.
- What strategies to use in order to interface with suppliers with strategically important competencies.
- Understanding what the effects might be of changes in one "link" in the network on the rest of the network (coping with interconnectedness.)

This interrelated set of models emphasised the human dimension of supply networks. The "clan" social grouping, for instance, could not succeed through purely rational, economic forces. The people involved would form (and be formed by) relationships. This would influence their work together, and they may, or may not, be successful in economic terms or otherwise.

It can be seen from this outline that back in 1996 my "systems view" was influenced by strategic choice, but even then I was cautious about the extent to which managers could design and implement strategies which moved their organisations toward objectives. A quote from Bate illustrates my view in 1996:

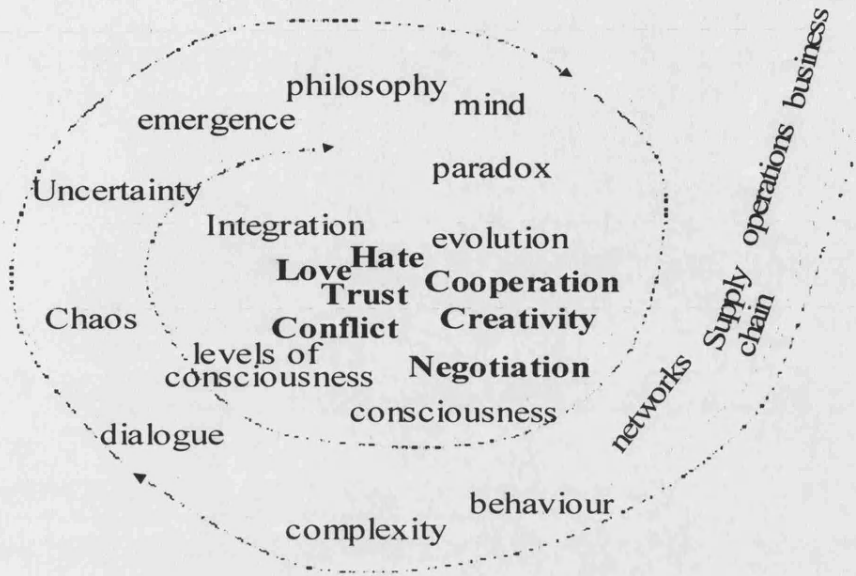
"Thinking culturally is not just a perspective; it is also a philosophy about organisations and organisational analysis. It puts itself forward as the antidote to the "keep it simple" philosophies that have been emerging from various quarters in recent years. It represents the view that organisation (and by that token, cultural) analysis and development must expect complexity, ambiguity, abstraction and - above all - intangibility in its subject matter, and must at the same time learn to live with these qualities. One just cannot escape them." (Bate (1994))

In conducting the research and writing the Thesis, I have become even more circumspect about the application of prescriptive management theories.

Further Development of the Conceptual Framework for the Research (1996-2002)

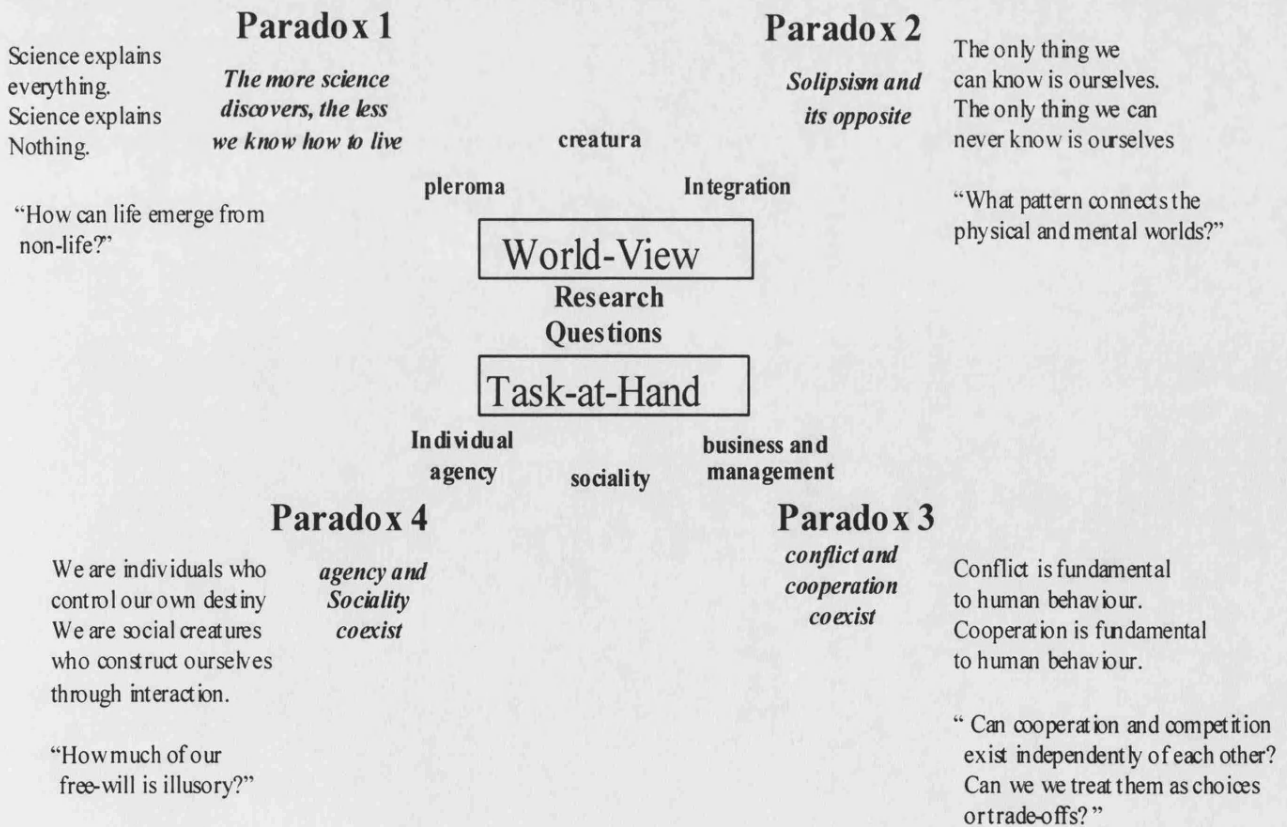
In this Thesis, I develop a view of the living world as a recursive place, where linear rationality often does not apply. In order to be consistent with this position, I might best describe my own development of concepts as a swirling of ideas around an attractor in "idea space". Topics central to the inquiry emerged in this space of ideas as shown in Fig (24).

Fig (24) Emergence of Inquiry Topics



It is also philosophically appropriate to position my inquiry within a set of paradoxes, since the recognition and acceptance of paradox is so key to my epistemology. This is shown in Fig (25).

Fig (25) The Research Inquiry Positioned in the Context of Four Paradoxes



The *task-at-hand* is this research project. In it, I explore how people might work more cooperatively across organisational boundaries. This surfaces two paradoxes. Firstly, there is the paradox between individual agency (or self) and social embeddedness. We are both spectacularly independent entities and yet also deeply interdependent. Secondly, there is the paradox of cooperation and conflict: a moment's reflection reveals that rather than simply making rational choices about whether to cooperate or compete, we are entangled in complex webs of cooperation and competition at every moment of our lives. The research also exists within my particular *world-view* as outlined in this chapter. This too is unavoidably paradoxical. Is my inquiry really a search for answers? As we shall see later in this Thesis, answers are sometimes not particularly useful or interesting: Insights are better. And what can we ever really know, in the social world of business, about ourselves, or others?

My research does not set out to answer, or resolve, these paradoxes. We should embrace them rather than fighting with them, switching between them to gain new insights.

During the course of the research experience, reflection and further reading within this philosophical context led to significant changes in the conceptual framework. In keeping with the narrative structure of the Thesis, the further developments of the theoretical framework are introduced in later Chapters.

Summary

Kenneth Boulding said: "Science might almost be described as the process of substituting unimportant questions which can be answered for important ones which can not."²³ Too often, management research seems to become "a method of torturing nature to give answers in terms of your epistemology, not in terms of some epistemology already immanent in nature" (Bateson, 1991, p192). To counterbalance this potentially dangerous state of affairs, I take a more cautious and circumspect position, where the "truth" is (as the Buddhists say) "held lightly". I aim to deconstruct, not out of a sense of anomie or intellectual vanity, but rather to build a necessarily tenuous understanding that is closer to nature.

A research expedition from this perspective starts from a different emotional as well as philosophical position:

"To see a problem is to see something hidden that may yet be accessible. The knowledge of a problem is, therefore, a knowing of more than you can tell." Polanyi (1961) p466

In this current chapter, I have outlined my considerations of research philosophy and approach.

The research questions are restated below in summary

The Research Questions

1. How can groups of people work collaboratively together as cross-organisational teams when they have some shared interests and some differences?
2. How can sufficient trust be developed in order that collaboration might flourish?
3. How can the natural human tendency to apportion "blame" be addressed?
4. How can creativity be nurtured in such ambiguous circumstances?
5. How can the unavoidable realities of power and politics be addressed?
6. Will successful cross-organisational teams have a distinctive sub-culture?
7. What will be the distinctive subculture of cross-organisational teams?
8. Will there be a typical set of roles in a cross-organisational team?

In the next chapter, research design is considered.

Endnotes

¹ References made here to the different interpretations of empiricism can be found in the Dictionary of the Philosophy of Mind, and in the Catholic Encyclopaedia (Web versions).

² Or at least claimed to be applied. See Easterby-Smith, Thorpe and Lowe (1991) for a discussion of the realities of research in the scientific community. It is not unusual for major scientific advances to be made as the result of either wild speculation, complete accidents or particularly vivid dreams. Nevertheless they are often "written up" as if they were gradually arrived at through a process of induction.

³ There is a common tendency in texts to confuse the philosophy with the method. Often, a positivist philosophy is assumed to produce a quantitative method, whilst a phenomenological approach would be thought to imply qualitative research methods. This is not necessarily true. It is quite possible to use quantitative methods under a phenomenological paradigm – the difference would be in what was being counted.

⁴ If one were to look for an exact opposite of Positivism, I would suggest that it might be close to Buddhism. Phenomenology is different from Positivism, but in my view they are *not* opposites.

⁵ No doubt eliciting the riposte of "barefoot empiricists!" from the political economists

⁶ In fairness to Descartes, his "Je pense donc je suis" (1637) and the later "Cogito ergo sum" (1644), can be misinterpreted (Magee (1987)). Descartes meant to refer not only to conscious "thought" but also all forms of conscious experience, including feelings and perceptions. Not so much "I think, therefore I exist." but rather "I am consciously aware, therefore I exist." From this perspective, his objectivity is less pronounced.

⁷ I am reminded of Albert Einstein's comment that "everything should be made as simple as possible - but not simpler" (in Einstein/Calaprice (1996))

⁸ An on-line demonstration of this cellular automaton is available at www.math.ubc.co/~cass/www/ant/ant.html

⁹ Stewart draws the diagram the other way up compared with Pelto and Pelto. I'm afraid this calls for a bit of visuo-spatial gymnastics from the reader.

¹⁰ I do not repeat the arguments supporting these assertions here, since they are detailed elsewhere in the Thesis

¹¹ I don't distinguish here between business behaviour and non-business behaviour, since if boundaries exist, then they are not the legitimised rational boundaries of most management texts.

¹² Although, arguably, the value of early involvement has not been proven empirically.

¹³ Supply Network, or just Network, might have been better than Supply Chain, but I decided to give readers a least one familiar phrase.

¹⁴ Lamming perhaps comes closest to the idea, with the concept of the "Quasi-Firm" (the term was introduced by Schumacher, but Lamming applies it in a Supply Chain context). Lamming's concept is at a more "Meta-Organisation" level, whereas my interest is at the level of the team itself.

¹⁵ In hindsight, I now see that the top of the flow chart represents nothing more than the "accepted wisdom" of the management theory genre at that time. An anthropologist would call such accepted wisdom the *mythology* of a particular culture. I also now find it interesting that the diagram assumes that human reasoning is a *linear* process (in this case top-to-bottom).

¹⁶ The term "managed" is not meant here in a directive, controlling sense. The possibility that such teams could be partly "self-managing" is recognised. (e.g. DeBono (1990), Imai, Nanaka and Takeuchi (1985), Kanter (1985), Salch and Wang (1993), Harrison (1995))

¹⁷ From Schumacher (1977), p50: "The understanding of the knower must be adequate to the thing to be known."

¹⁸ Whilst recognising the importance of other contributions including Senge (1990), Schein (1993), Burgoyne (1992), Garratt (1987), Stuart (1985), Lebbby (1992), West (1994), Argyris (1982), Revans (1985)

¹⁹ Taxonomies relate closely to the views of Descartes outlined in the section on research philosophies

²⁰ For example, Meredith Belbin has spent 20 years researching propositions regarding roles in management teams, within a narrower context than my own.

²¹ My original set of research questions included reference to "tools and techniques". The modified questions do not.

²² Also shown in the figure are the more "traditional" purchasing roles: Resource Investigator, Legal Bureaucrat and Commercial Gatekeeper.

²³ A common attribution, for example see European Foundation Report on Employment and Health, Brussels, June 3rd 1995 (WP/97/82/EN)

CHAPTER SIX: RESEARCH DESIGN

Introduction

“Animals studied by Americans rush about frantically, with an incredible display of hustle and pep, and at last achieve the desired result by chance. Animals studied by Germans sit still and think, and at last evolve the solution from their inner consciousness.” Bertrand Russell¹

This quote captures my philosophical position nicely. Even if we have ambitions of “objectivity”, we project our assumptions about the nature of the world into our observations. There is scope enough for this when observing animals, but even more when observing humans in a social setting.

There is no value-free research in the social sciences.

The Research Design

Choice of Type of Research

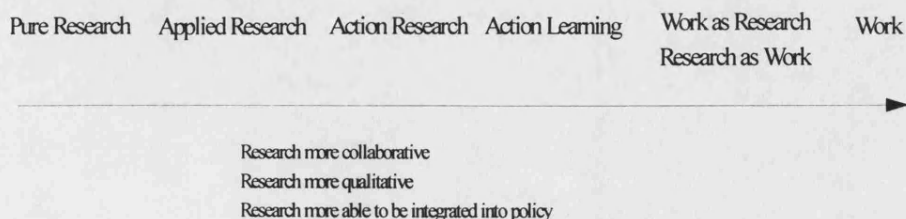
Phillips and Pugh (1987) describe three categories of research; Exploratory, Testing Out and Problem-Solving. “Exploratory” research involves tackling a problem or issue about which little is known. “Testing Out” involves finding the limits of previously proposed generalisations. This is a basic research activity. It could involve changing one variable and seeing what effect, if any, this has on the results. “Problem Solving” research starts with the definition of a problem to which a solution is needed. This will usually involve a range of different methods and theories from different disciplines, and is much “messier” than Testing-Out.

The paradigm, research problem and theoretical framework which I have outlined in the preceding sections do not fit with “Testing Out” or “Problem Solving”. The research involves investigating a subject about which little is known. The “problem” can not be stated in a highly definitive way; it will vary from one organisation to another. “Exploratory Research” is therefore the most appropriate description of this research.

Easterby Smith, Thorpe and Lowe (1991) discriminate between “forms” of research: *Pure Research* is intended to lead to theoretical developments. Its key features are discovery, invention and reflection. There “may or may not” be practical implications. The results are often addressed to a largely academic audience. *Applied Research* is aimed at problem-solving. In management research terms it may involve being asked to solve a problem for a client. To be academically respectable, the solutions produced need to be accompanied by some sort of rational and rigorous explanation. The distinctive feature of *Action Research* is collaboration between researcher and client, in order to achieve some particular goal.

These forms of research can be considered as a continuum, as shown in Fig (26):

Fig (26) Approaches Toward Finding Out in Management
From Stuart (1984)



At this point, I want to say a little more about my research and position it within this framework. Initially, my ambition for the research was for it to be collaborative enquiry: a close collaboration between me and the chosen organisations. I intended to share with them their own perceptions of problems and participate with them in the development of ideas. However, as the work evolved, I had to modify this position.

I work as a management consultant, and at the time of the research I was a Director in a large management consulting firm. My plan was to draw on two long-term projects with clients which I was leading, and to use these as the basis of my research. Further, as a result of my particular research philosophy, I wanted to use an ethnographic approach in the research. In one respect, the research was collaborative and participative. This was from the perspective of my job, as a management consultant. Reason (1994a) makes the point that one of the major requirements for collaborative inquiry is the presence of *risk*: all those involved need to have something to gain or lose from the endeavour. This element of risk was certainly present: I was working closely with clients on projects where the impact of the consulting work would be £millions, and in one case £billions.

Things rarely turn out according to plan in research, and my case was no exception. As the work evolved, it became clear to me that to ask the clients to participate with me in a collaborative, ethnographic research project - in parallel with the consulting work - would be both impractical and potentially dangerous. Consulting projects are politically charged endeavours, even without the added complications of a management research project². This was further compounded by my preference for an ethnographic approach: Dare I tell my consulting clients that they were ethnographic research subjects? How would they react? What would be the impact on the consulting work? It seemed to me that the ambiguity that it would create about my role in particular, was too great. In times of conflict it may have been used as a weapon against me. In more collaborative times, client people would be uncertain whether I was talking to them as a consultant or as a researcher. People are suspicious of either: how could they cope with someone who was both?

My judgement was that I should not make any official announcement that I was carrying out the research. So my *research* was covert, and not collaborative: even though I would like to think that my consulting work was collaborative.

There is a respectable tradition of covert research in ethnography, from the urban anthropology of Foote-Whyte (1943) to the business ethnographies of Dalton (1959) and Rosen (1991). This is not to deny the ethical issues. We can perhaps apply a version of the Hippocratic Oath to “do no harm”, and I am quite sure that the research itself did no harm to the organisations involved. Nevertheless, there is the question of whether carrying out such research infringes the rights of those who are captured in the ethnographic accounts, and this is a troublesome issue. Whilst I made no formal announcement to either client company that they were to be research subjects, some particular client employees were made aware of what I was doing, at a point at which I felt that we could trust each other. Overall, my view is that – providing the material presented in the ethnographic accounts is carefully restricted – there has been no infringement of the rights of the people who were involved, and that there is potential for useful insights into the practice of management from this type of research.

My own research, then, is on the border between “Pure Research” and “Applied Research”.

Choice of Research Design

A distinction between research types, research designs and research methods is sometimes made in research texts. There is no single, generally accepted typology. In a single-handed project such as this, such distinctions are fuzzy:

"The design function is virtually invisible when a researcher carries out a project single-handed, developing and revising the initial plan as the study progresses" (Hakim (1987)) p3

Research can be classified as nomothetic or ideographic. Ideographic research produces findings which are relevant to a particular time and a particular situation, whereas nomothetic research can be generalised.³ This research is ideographic, relating to specific organisations over an extended timescale. Generalisation is possible, but this should be back to the specific case, or to the theoretical model.

A further difference in available approaches to research design uses the terms "emic" and "etic" (Pelto and Pelto (1978))⁴. Table (9) outlines the differences.

Table (9) Emic and Etic Approaches in Anthropology

Source Pelto and Pelto (1978)

Emic

Primary Method is interviewing in depth in the local language

Intent is to seek categories of *meanings*, as nearly as possible in the way "locals" define things

The people's definitions of meaning, their idea systems, are seen as the most important "causes" or explanations of behaviour

Systems and patterns are identified through logical analysis, especially by a quasi-linguistic analysis of contrasts sets

Cross-cultural generalisations must wait for the *conversion* of culturally specific patterns and meanings into more abstracted, intercultural categories

The methodological strategy is fundamentally inductive, for research cannot proceed until the "locals'" categories of meaning have been *discovered*

Etic

Primary method is observation of behaviour

Intent is to seek patterns of behaviour, as defined by the observer

Impersonal, non-ideational factors, especially material conditions, are seen as significant movers of human action

Systems and patterns are identified through quantitative analysis of events and actions

Cross-Cultural generalisations *can* be made, by applying the same methods of observation, with the same outside-derived concepts, to two or more different cultures

The methodological strategy can range from "pure induction" to various mixtures of inductive and deductive research

The table captures a fundamental problem of doing participative research. If the researcher is to gain genuine insights and understanding, then it is necessary to get to know the subjects well and understand some of their thoughts and feelings. At the same time, one needs to avoid "going native" completely, and being unable to make necessary interpretative judgements. This balance between "authenticity" and "distance" is an important element of fieldwork (Pearson (1993)). My aim was therefore to achieve a balance between emic and etic.⁵

Research programs can be designed to achieve either verification or falsification (Popper (1959)). A research design based on verification would look for evidence to support a proposition, whereas a design based on falsification would look for evidence to disprove the theory. The advantage of falsification designs is that they can be more efficient in terms of time

and effort - much time can be wasted collecting evidence for a theory that is eventually discredited. Falsification also supports a perceived need for "academic rigour".

A choice between a verification or falsification design is considered essential within a positivist paradigm, but from my particular epistemology, there is a problem. The problem is paradox. From the philosophical position that I outlined in Chapter 3, paradox has a different meaning than it would have in a positivist sense. Like Reason (2000) and Stacey (2003) I admit the possibility of what we might call a "true paradox", which is the existence of two apparently contradictory realities at the same time.⁶ From a positivist position, a paradox cries out for resolution: it is intolerable. From a phenomenological position, a paradox is not only tolerated but rejoiced in. If one accepts the possibility of an unresolvable paradox then a *proposition can be falsified and yet still be true*. What an unsatisfactory state of affairs the natural world offers us!⁷

A further important distinction in research design is between cross-sectional and longitudinal studies. Cross-sectional studies consider a number of organisations against a fairly narrow range of parameters and aim to find similarities and differences. A weakness of cross sectional studies is that, whilst they may identify statistically valid relationships, they are often unable to explain the research findings. Longitudinal research methods aim to consider a small number of organisations in depth, over a longer time period. This brings with it the challenge of verification based on a small sample size. However, much of this is a false dichotomy resulting from the desire of management theorists to copy the methods of classical physics. Anthropologists have been able to deal with sample sizes of one, whether this be a street corner (Whyte) or a village (Malinowski).

My research was designed to explore a conceptual framework and a set of broad enquiry questions. A longitudinal research design was appropriate.

Research Design: Summary

Table (10) summarises the choices available for research design, showing the decision taken in each case in relation to this study. The reasons for each decision have been explained in the text.

Table (10) Research Design Choices

Stage	Choices	Type Used in this Study	Reference
Research Philosophy	Positivist or Phenomenological	Phenomenological	Easterby-Smith, Thorpe and Lowe (1991)
	Inductive Reasoning (Start with details and build up big picture) or Deductive Reasoning (start with big picture)	Both Inductive and Deductive reasoning at different stages, in an iterative process	Easterby-Smith, Thorpe and Lowe (1991)
Type of Theory	Ad Hoc classificatory, Taxonomy, Theoretical Systems, or Conceptual frameworks	Conceptual Framework	Nachmias and Nachmias (1982)
Type of Research	Testing-Out, Problem Solving or Exploratory	Exploratory	Phillips and Pugh (1987)
	"Pure" research, Applied research, Action Research, Action Learning or Practitioner Work (Continuum)	Pure/Applied Research	Easterby-Smith, Thorpe and Lowe (1991)
	Testing Theories or Generating Theories	Generating/Building Theories	Easterby-Smith, Thorpe and Lowe (1991)
Research Design Approach	Emic (in depth - from the "inside", descriptions) or Etic (detached -from the "outside", more generalisable)	both Emic and Etic	Pelto and Pelto (1978)
	Ideographic (produces findings which are historic and specific) or Nomothetic (produces findings which are generalisable)	Both Ideographic (rich, specific findings) and Nomothetic (generalised, but only back to the case and its propositions, not to the "population")	Pelto and Pelto (1978)
	Large Samples/Surveys or In depth/longitudinal, small sample/case study	Case Study/ Ethnographic approach	Easterby-Smith, Thorpe and Lowe (1991)
	Verification (try to prove theory) or Falsification (try to disprove a theory)	Test understanding though dialogue?	Popper (1959)

Choice of Research Method

The previous sections have outlined the foundations of the research design. This section describes the research method, explaining why the method was chosen, and how it was applied within the overall research design. Decisions about design included the following:

- A phenomenological research philosophy was to be applied.
- Application of a conceptual framework as a "way of seeing" but combined with a "theory-building" approach
- Pure/Applied Research
- Attempts to understand the situation from the "inside" through participation, whilst retaining sufficient detachment to allow judgement and self-criticism.
- A longitudinal study involving a small number of organisations in depth.

Yin (1993) outlines the following research methods in social sciences:

- Surveys
- Experiments
- Quantitative Analysis of Archives
- Historiography
- Case Studies

Surveys tend to be used in cross-sectional research. The relevant concepts must be sufficiently operationalised to allow straightforward questions and later quantitative analysis.

Experiments tend to follow the positivist philosophy and require predetermined hypotheses.

Quantitative analysis of archives and historiography are not appropriate to this study, partly because the phenomena are too recent to be supported by archive evidence, but also because it would not be possible to achieve the appropriate level of access and understanding from archive data.

Yin suggests that case studies are appropriate where investigators wish to (a) define topics broadly, (b) cover contextual conditions and not just the phenomena of the study and (c) rely on multiple sources of evidence. The current study fits all these criteria. Yin also contrasts the case study approach with ethnography, but this distinction seems a false one. Yin's view of a case study is specifically within a positivist paradigm. Much social science research has been carried out as case studies using an ethnographic methodology. Indeed, much ethnographic research work could be classified as case studies.^{8 9}

Taking the opportunity to use a role as a consultant in order to gain access to organisations and carry out longitudinal research is a practice that has been followed by many:

“It appears to be more a rule than an exception that the researcher has gained access to his data in his role as a consultant rather than a researcher....It is probably easier – if not completely problem-free – to approach these (cultural and symbolic) phenomena by participating (as a consultant or a member of the organisation) in the organisation in question over a relatively long period of time, To be close to the empirical object is of vital importance.” Alvesson and Berg (1992) pp50, 51

Easterby-Smith, Thorpe and Lowe (1991) add interviews, participant observation, diary records and questionnaires as further methods. Of the potential research methods considered, a case study approach using ethnographic methods seemed particularly appropriate.

This is an appropriate point to make some further comments on my choice of ethnography as a research method.

There are almost as many definitions of ethnography as there are books on the subject. Some of the principles are detailed in the Table 10, above. In the limited space available here, I can only give a flavour.

Ethnography “... originally developed out of the “strange tales of faraway places” of early Social Anthropology [and was] adapted for sociological employ through the “naturalistic stance” of the Chicago School.” (Crabtree (2000)). It consists “in its most characteristic form” in “participating overtly or covertly in people’s daily lives for an extended period of time, watching what happens, listening to what is said... in fact, collecting whatever data are available to throw light on the issues that are the focus of the research.” (Hammersley and Atkinson, (1995) p2)¹⁰

In Chapter 4, I outlined three specific arguments or principles underlying my research:

1. We should be researching the actions of fully-human men and women
2. Who are embedded in a living, biological, creatural world
3. We should recognise the importance of such research for the survival of the human species

I also emphasised my intention to position the inquiry within a participatory world-view, which moved away from the subject-object position of much orthodox management research. We should now consider if, as a research method, ethnography supports these aims.

In many works of ethnography “the epistemological aim is to braid the knower with the known” (Van Maanen (1988, p81). The observer is not considered a detached external observer of events but more commonly as an embedded participant in them. As a consequence, an ethnographic account is both “essentially contestable” and “intrinsically incomplete” (Geertz (1973) p29). For an ethnographer “ultimately the reason for selecting one methodological approach over another is an issue of aesthetic choice [one might say of quality], involved more with what a researcher desires to study than with how he or she will do it. These choices involve

a perception not only of what is “beauty” but of the “truth” underlying it” (Rosen (1991)). And furthermore:

“Ethnography is the only human activity in the social sciences. As a method it is not divorced from the modes of experience that I consider human, that is, not divorced from my “reality”. It is therefore one of the few ways of doing research that speaks the “truth” as I understand it.” Kunda (1986)

and

“[Ethnography] is grounded in the everyday reality of the people it studies” (Linstead (1997))¹¹

This recognition of ethnography as a qualitative, reflexive, participative process suggests that it is an appropriate choice of research method within the context of my research agenda, philosophy and design.

My research questions related to roles, relationships and culture. Ethnography as an approach has addressed these issues in a number of settings over a considerable time.

We all think we know what we mean by culture, but ethnographers talk about it in different, and interesting, ways:

"Culture is simply a convenient way of describing the sum of learned knowledge and skills that distinguishes one community from another" (Lewis (1976))

"(Culture is..) created out of the flow of human life and human relations.... something mutable and metamorphic" (Carrithers (1992))

In an organisational setting this means that

"Culture is something an organisation *is* not something it has."(Jermier (1991))

"Culture is created by the human capacity for "sociality", our ability to "track a complex flow of social interaction" (Carrithers (1992) p177.)¹²

Within this context, ethnographic thinking has been described as " The subtle skills of opening ourselves to others" (Carrithers (1992) p177), in that it involves the researcher in learning and understanding what is initially a "foreign" process of social interaction. The learning process starts with "unlearning" the preconceptions and assumptions of ones own "culture". There is an established tradition of ethnographic practice in management research:

“The process of developing an understanding of the "complex flows of social interaction" requires that the ethnographer joins the relevant community for a period, but not as a "full member"”:

(Dalton (1959))

"The ethnographer does not have to be a competent burglar, or prostitute or policeman in order to deliver competent ethnographies of work, life and crime.....What is required is neither full membership nor competence, but the ability to give voice to that experience" Pearson (1993)

The research process involves taking detailed notes of observations and experiences in the "field". It is not normally possible to determine which information is useful or relevant at the start of the research. A range of methods can be used to elicit concepts and meanings from observations. Methods often used in analysis of ethnographic “data” are often related to "Grounded Theory" (Glaser and Strauss (1967)).

Summary

The research design for the Thesis was exploratory, using a broad conceptual framework. It was a mixture of “pure” and “applied” research. The organisations were researched in a longitudinal study, each over two years (four years in total) using ethnographic methods.

Endnotes

¹ Quoted in Calvin (1997)

² Some insights into the environment in which I was working can be gained from the ethnographic accounts themselves (Chapter 8)

³ This originally related to the distinction between history and science. Some anthropologists have used this distinction.

⁴ From Pike (1956, 1976) and Goodenough (1956)

⁵ My research contains little quantitative analysis. The reasoning for this is explained in later Chapters, and is crucial to the philosophical position I have taken in the research.

⁶ I note in passing how difficult it is difficult to avoid positivist language (“true paradox”) in a world influenced by centuries of positivist thought.

⁷ From this position, the obsession in the social sciences for verification or falsification of hypotheses becomes faintly ridiculous, whereas the alternative emerges as challenging yet noble. Maturana coined a good phrase for it: “putting objectivity in parenthesis”. (Maturana, H (1988) *Ontology of Observing*, Conference Workbook Texts in Cybernetics, American Society for Cybernetics Conference, Felton, CA October 12-13, 1988)

⁸ Yin outlines three types of Case Study: exploratory, descriptive and causal. Exploratory case studies are often “pilots”, causal case studies are aimed at providing direct link between phenomena (although it may not be possible to “explain” the causality). A descriptive case study provides “a complete description of a phenomenon within its context”. This latter type is closest to ethnography and has some similarities to my planned method. However, within Yin’s definitions, the elements of shared discovery and theory-building are missing.

⁹ Yin’s taxonomy, above, is based on Fetterman (1989)

¹⁰ This quote is very much from the perspective of a Social Anthropologist, and is the position from which I base my inquiry. Hammersley and Atkinson add that “... we would not want to make any hard-and-fast distinction between ethnography and other sorts of qualitative inquiry”

¹¹ I use the term “ethnography”, not “ethnomethodology”. This is deliberate. Whilst ethnomethodology has some common ground with ethnography, I understand ethnomethodology to be more narrowly defined, as: “an ethnoscience that studies the methods used in an identifiable range of native activities” (Lynn (2002) interpreting Garfinkel (1967))

¹² Whilst Schein observed that culture is “the way we do things around her”, his more recent work acknowledges that this is merely the tip of the iceberg. Surviving in a culture requires a deeper knowing (Schein (1999))

CHAPTER SEVEN: FIELDWORK AND DEVELOPMENT OF THE ETHNOGRAPHIC ACCOUNTS

Introduction

“When I was a young student in London I thought I should get a few tips from experienced fieldworkers before setting out [on my field research]. I first sought advice from Westermarck. All I got from him was “don’t converse with an informant for more than twenty minutes because if you aren’t bored by then, he will be.” Very good advice if somewhat inadequate. I sought instruction from Haddon, a man foremost in field research. He told me it was really quite simple; one should always behave like a gentleman. Also very good advice. My teacher Seligman told me to take ten grains of quinine every night and to keep off the women. The famous Egyptologist, Sir Flanders Petrie, just told me not to bother about drinking dirty water as one soon became immune to it. Finally I asked Malinowski, and was told not to be a bloody fool.” Evans-Pritchard on how he learned fieldwork.¹

Researcher and Resources

I worked in the electronics industry for fifteen years in supply chain management and operations roles, followed by eight years in consulting. As a consultant, I have worked with people in large organisations who are tackling strategic issues. Being a consultant brings the advantage of access, but also some disadvantages: There are typically complex political considerations, and not all managers welcome consultants with open arms.

I have gradually come to the view that a good management consultant is an industrial anthropologist, and I offer the following description of fieldwork in support:

“An ideal participant observer is able to see himself as an educated and highly intelligent adult, and, simultaneously, as a ludicrous tenderfoot or *Schlemiel* ... He is able to accept the laughter and ridicule of his hosts as instructive, not because he is saintly in nature, but because making fun of improper or incorrect behaviour is an ancient if painful method of pedagogy. He is also able to live with a sense of his own dangerousness, that is, the knowledge that any of the words or deeds which he considers natural or well intentioned may be interpreted by his hosts as hostile or insulting. Further, he is able, for weeks or months, to function like a sane and reasonable being in a situation which, for him, is largely without pattern or structure. He does not know whom he can trust, or whom he can trust about what, or, indeed, if he can trust anyone about anything at all. He may find, not once, but repeatedly, that he has been misled, cheated, exploited, or blackmailed, and that, in addition, “the community” knows all about this and is laughing at him. In the last case, if he is a really sterling participant observer he will be able to shake himself, laugh, and realise that slowly but surely he is learning to stay out of trouble.”

(Wax (1971))

This passage works equally well with “management consultant” replacing “participant observer”.

There were other resources available to me during the research process, including advice and guidance from my supervisor, Professor Lamming, and various members of the Centre for Research in Strategic Purchasing and Supply, who I have thanked elsewhere. I also attended and presented at several relevant conferences (IPSERA, IMP).

I was initially concerned about my lack of previous experience in ethnography. I read extensively on the subject, both on the practice of fieldwork and the field accounts themselves (see bibliography). I also spoke to some academics at the University of Bath who had an interest in ethnography. Later, when the research was almost complete, I found some excellent advice on the website of the Sociology Department at Lancaster University:

“DO NOT READ METHODOLOGY BOOKS

Ethnography is not an esoteric procedure, nor is it searching for things that are hard to find. This is why we recommend that you do not read methodology books prior to doing ethnography. This will only make you worry about the fact that whatever you find will not fit the theories. You will not be able to satisfy the methodological requirements set out in such books. The method is, however, rather more than simply hanging around. The method seeks to preserve and portray the variety of activities and interactions that comprise the “workaday” of working life, and the ways in which these are understood and accomplished by those who do the work. [The objective is] uncovering the sociality of work.”²

“Uncovering the sociality of work”: so *that’s* what I was doing! This would have been useful advice if only I had read it a few years earlier.

Choice of Research Field

The choice of organisations to research seemed important, particularly since the study was to be longitudinal: I read much about the criteria for selection of organisations for ethnographic studies.

However, I can now speak from experience and state that there is one single overriding consideration: *access*. As Linstead (1997) points out, you cannot investigate the Azande two days a week, and this is equally true of urban anthropology. Most of the best ethnographic accounts found their subjects through happenstance, from Foote-Wyte’s street gangs (Cornerville was close to Harvard), to Bateson’s Naven (a chance meeting on a train with Haddon, who was interested in New Guinea), to the contemporary ethnographies of Rosen (who is both a member of the New York business elite and an ethnographer of them). If one is fortunate enough to be able to spend long periods of time with a group of people, and at the same time one is interested in taking advantage of this opportunity to capture (albeit subjectively) the workaday of everyday life, then there is the potential to do ethnography.

In my case, happenstance offered up two large organisations, along with the opportunity to spend an unlimited amount of time with them over a period of four years. I still had to do a very difficult day-job at the same time, but at least this gave me a legitimate excuse for being there.

Informers and Gatekeepers

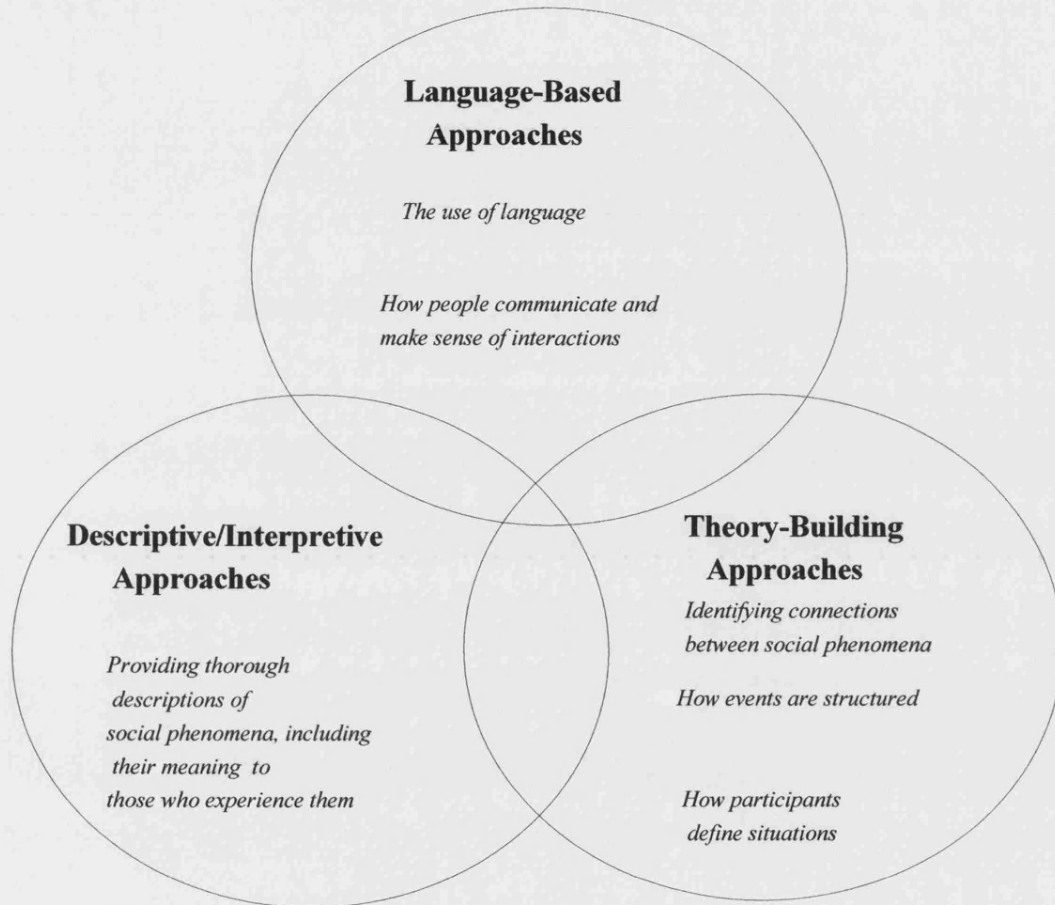
In anthropology, emphasis is often placed on the identification of key contacts in the community being researched. These people can help in interpreting what is happening, give hints on where to look, make introductions and generally be a friend and supporter of the researcher. Again, the parallel with consultancy is clear. I did seek out and use such people, often for the even more pressing priority of getting the consultancy job done, but to some extent they fulfilled both roles. In the ethnographic accounts which follow later, some of these informers and gatekeepers feature, but I have not explicitly identified them.

The Collection and Interpretation of “Data”

“Each time [the anthropologist] returns from the living sources of his knowledge to that which operates in him as a means of understanding, he spontaneously makes philosophy.”³ Merleau Ponty (1960)

A number of references were studied for guidance in the process of data collection and analysis. On the subject of case study research, I found Stake (1995) particularly helpful⁴. In gaining a better understanding of the challenges of analysing qualitative data, Dey (1993) offered useful advice. Tesch (1991) in a review of qualitative research methods, notes that these fall into three broad categories as shown in Fig (27).

Fig (27) Approaches to Qualitative Research
(Tesch (1991))

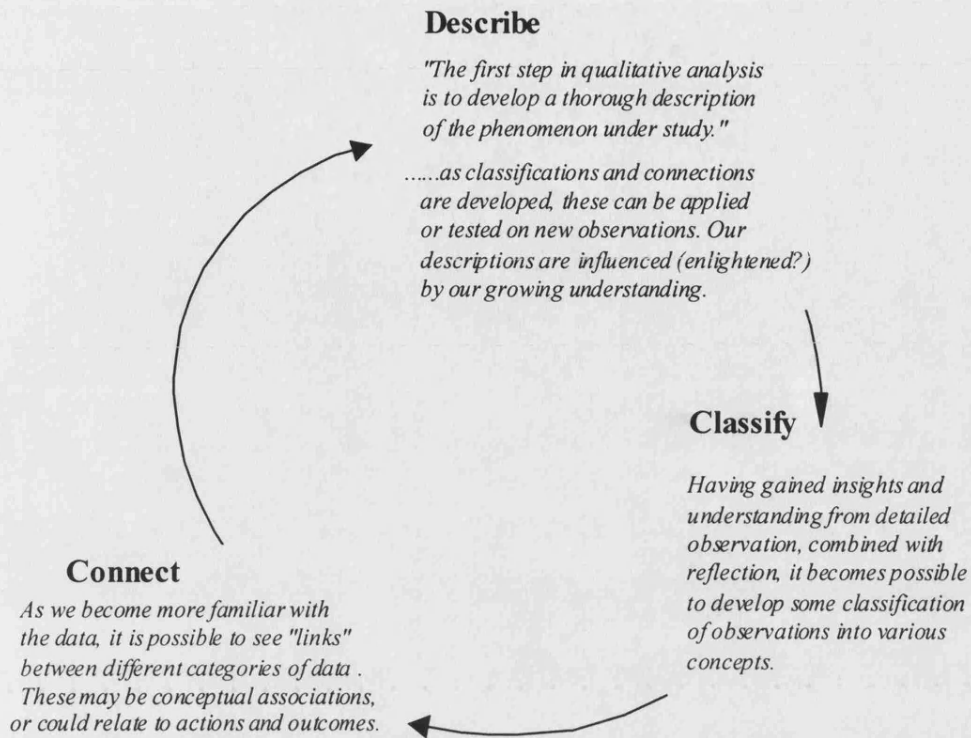


Some research methods are aimed at gaining an understanding of social situations by analysis of the use of language. Such approaches would include the "cognitive anthropologists", who study the use of language in the research field to gain insights into the way people form concepts. A second type of method involves description, and would include the detailed field notes and descriptive output of much ethnographic research. Tesch's final category is theory-building, which is more interested in building links between concepts⁵.

My own primary interests overlap between two of these categories - theory-building and descriptive. I am interested in the way the participants use language, but only in so far as it supports my efforts in description and theory-building.

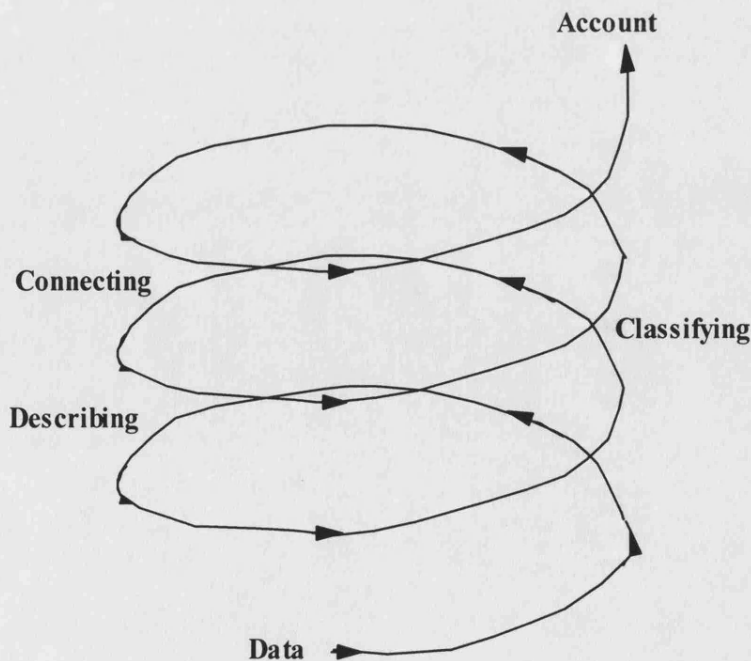
Dey (1993) suggests that the process of collecting and analysing data can be considered as a cycle, as shown in Fig (28). Only by participating, reflecting and describing, are we able to become familiar with social "data", eventually leading to sufficient insight to attempt some initial classifications and links.

Fig (28) The Process of Qualitative Analysis



The slow process of gaining understanding informs subsequent observations, making the process a "spiral" rather than a cycle (Fig (29)). Classifications and links are then modified as the understanding develops.

Fig (29) The Process of Qualitative Data Analysis
 Based on Dey (1993)



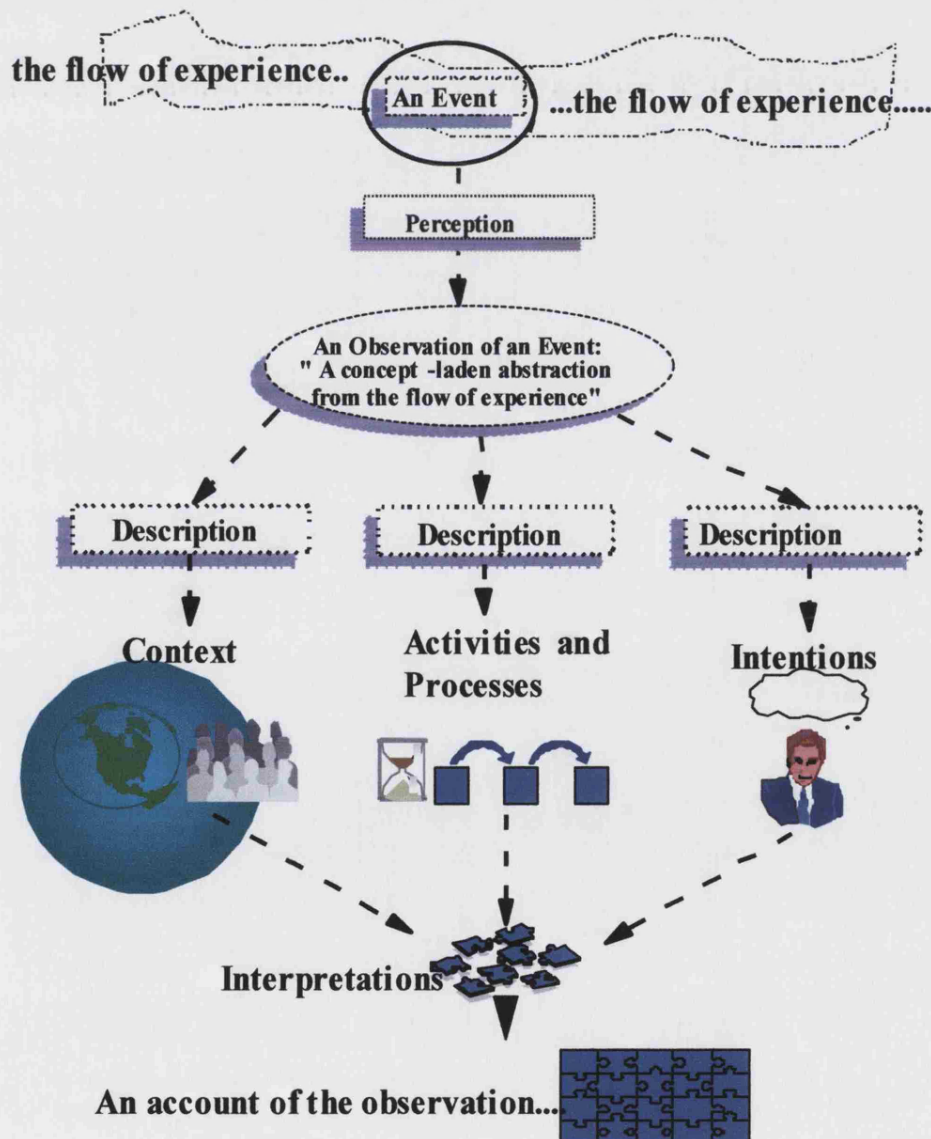
Observation and Description

Dey (1993) describes a "bit" of qualitative data as "a ripple in the flow of experience". This is in keeping with Carrithers description of human sociality, quoted earlier - "the ability to track a complex flow of social interaction". So, in carrying out qualitative research we are trying to use our entire analytical potential. But our perceptions are not explicit, and we arrive at them by incorporating a range of tacit knowledge, including our previous experiences. All our perceptions of events are unique. The process of description can be presented graphically as shown in Fig (30).

Dey emphasises that in describing any event it is important to capture relevant details of the context, without which the meaning might be lost or misinterpreted. The intentions of the participants need to be understood as much as possible, although this will always be a compromise, since true intentions may not be disclosed, or may be subconscious. Also important is the process or time perspective of the observation. There may be phases of social action. The observations could relate to parts of a wider change process.

Fig (30) The Process of Description in Case Study Research

Adapted and Developed from Dey (1993) p32



With regard to the practicalities of collecting field “data”, I found advice in Hammersley (1990) useful. Throughout the fieldwork, I maintained three separate but related journals as follows:

Field Notes

There were collections of “raw” observations, notes of conversations, correspondence, anything which I collected in the hope, rather than the expectation, that it might be useful later. It is in the nature of much ethnographic work that you do not know what is going to be useful during the time when you are in the field. Notes were structured into headings which provided a checklist for significant information, such as space, actors, actions, events, time, intentions and feelings.

Analytic Notes

Hammersley suggested a separate journal for emerging ideas of analysis of the data. For a long time this journal was quite empty. Much of the interpretation of the field experiences emerged later, during various phases of writing up the ethnographic accounts

Field Journal

This a personal diary for capturing personal thoughts and reflections.

Monaghan and Just (2000) point out that ethnography is often at its best when capturing unexpected or idiosyncratic events. I was therefore particular keen to capture experiences which were uncomfortable, thought-provoking or dramatic. My note-taking was copious, in the hope of achieving what Geertz (1973) calls “thick description”, but I was never sure if I was noting the right things. I tried to remind myself of Linstead’s (1997) characterisation of urban anthropology: “Rather than taking the strange and applying it to the familiar, it treats the familiar as though it were strange”: working as a management consultant, this is not so difficult – client environments always remain partially alien, no matter how hard one tries to fit in.

Note taking was often not possible at the time an event was taking place and had to be done as soon afterward as possible: during a visit to the cloakroom, in the hotel room at night, on the back of a menu during dinner, or in the back of a taxi.

"Giving Voice to the Experience" – Presentation and Interpretation of Ethnographic Accounts

"If we wish to understand the deepest and most universal of human experiences, if we wish our work to be faithful to the lived experiences of people,if we wish to use our privileges and skills to empower the people we study, then we should value the narrative." (Richardson (1999))

Narrative is important in ethnography. Whilst many have stressed the differences between a case study report and a novel, Davis (1974) established a number of thematic parallels between classic works of fiction and ethnographic accounts. Some of the most successful and academically respectable accounts have drawn on a wide range of influences from classic fictional literature, vivid imagery, metaphor and dramaturgy. As a result ethnographic accounts are often idiosyncratic and occasionally captivating:⁶ I enjoyed reading a range of ethnographic accounts including Geertz (1973), Talcott Parsons (Camic (1991), Malinowski (1922, 1945), Bateson (1936), Hall (1976), Evans-Pritchard (1940) and Mead (1962). Particularly influential in helping me to apply ethnography to management were Watson (1996, 2000) and Rosen (1991).

In trying to create my own particular ethnographic accounts, I did get something of the feeling of being a pioneer. Linstead (1997) notes that social anthropology “is clearly the furthest advanced in taking postmodern ideas about the representation of truth and knowledge seriously” but notes that in regard to the ethnographic study of management “where the participation is total the involvement with management is partial, and where the involvement with management is total the participation is partial”. This, then, is a claim for the uniqueness of my research: the participation and the involvement with management were both total.

Back to narrative. Van Maanen (1988) categorised ethnographic accounts as follows:

Realist Tales

"A rather matter-of-fact, direct portrait"

Confessional Tales

"Focus far more on the fieldworker than on the case"

Impressionist Tales

"Personalised accounts of fleeting moments of fieldwork case in dramatic form"

I have tried not to be too self-absorbed in the tales, but I am present on the page. The field accounts are not objective statements of fact, and should not be read as such: "Anthropology has been the first field to thoroughly explore the consequences of treating its researches as representations rather than taken for granted truisms" (Linstead (1997)). In fact, as Bruner (1986) points out, a narrative without the coexistence of multiple interpretations, is not a narrative at all. The ethnographic text is no more than a potential catalyst for the creation of many potential meanings. As Bakhtin (1981)⁷ puts it, meaning is created in an interplay between text and reader, through which a borderzone of co-created meaning emerges.

Geertz notes that all ethnographic texts are fictions: They are fictions in the sense of "something made" or "something fashioned" (Geertz 1973 p14). They are offered in the knowledge that they are both subjectively presented and will be subjectively read and interpreted. I have been careful to reveal "the hand of the puppeteer" (Watson (1995)) in the narratives presented here.

What of my own interpretations of the field accounts? These are offered in Chapter 10. For a moment, let us think of my interpretations as an attempt at *explanation*. Gregory Bateson (1979, p82) has some interesting things to say about explanation. Explanation, he reminds us, is strictly nothing more than *the mapping of a description onto a tautology*. A pure description would be a collection of facts, but without any means of connecting them together. A tautology is simply a rather formal set of propositions which are closely linked to each other: A tautology exists in its own little theoretical world, where there exists no other propositions other than the ones linked together in this particular tautology. The tautology itself "contains no information whatsoever", whilst "description contains information but no logic". Bateson continues:

"Now, an explanation is a mapping of the pieces of a description onto a tautology, and an explanation becomes acceptable to the degree that you are willing to accept the links of the tautology... It is always a matter of faith, imagination, trust, rigidity, and so on... of you and me."

So any explanation is an action of belief, or faith. My own explanation of my field experiences in Chapter 10 is therefore a leap of faith, and so is an explanation reached by any reader of this thesis. Whether we agree on our interpretations of the field experiences is not crucially important, since as Bruner says:

"A good story and a well-formed argument are of different natural kinds...arguments convince one of their truth, stories of their lifelikeness" Bruner, 1986 p11

Summary

“An ethnographer is one who, on the basis of explicitly stated theories about [humanity] and social organisation, develops... questions in a manner which makes them investigable in a range of cultures” Birdwhistell (Brockman (1980), p1 14)

It is important to note that an ethnographer is far more concerned about development of appropriate questions than about answers. This position is crucially important to the philosophy applied in this Thesis.

Hammersley (1990) suggests that ethnographic accounts should be evaluated against two criteria:

Validity: Are the claims made plausible? How credible is the author's judgement in the matters concerned?

Relevance: Are the research findings of relevance to issues of social/public/business concern? Do the findings have relevance for future practice?

Since such evaluations are necessarily subjective, I can but throw myself at the feet of my examiners.

Endnotes

¹ Cited in www.dourish.com/quotes.html (and also on Lancaster University's website)

² <http://www.comp.lancs.ac.uk/sociology/ASOC/Handbook/Practical.html>

³ Merleau Ponty actually said sociologist rather than anthropologist, but the connection is close and borne out by other anthropologists

⁴ It was helpful because it took a more phenomenological approach than Yin (1993).

⁵ All three approaches relate to theory. The "theory-building" category seems more related to "meta-theory".

⁶ For examples see Hobbs and May (1993), Frost et al (eds) (1991)

⁷ Bakhtin (1981)

**SECTION 4:
FIELD ACCCOUNTS
AND INTERPRETATIONS**

CHAPTER EIGHT: TALES FROM THE FIELD

Introduction

“How could human behaviour be described? Surely only by sketching the actions of a variety of humans as they are all mixed up together. What determines our judgement, our concepts and reactions, is not what one [person] is doing now, an individual action, but the whole hurly-burly of human actions, the background against which we see any action” Wittgenstein (1922)

This chapter presents a series of field tales: “concept laden abstractions from the flow of experience”. The tales are subjective narratives, not objective “data”. They offer perspectives and opportunities for insight into supply chain theory. The Tales are drawn from four years of fieldwork between 1997 and 2000, with one “follow-up” postscript from 2003. The Tales address two longitudinal ethnographic experiences, where I lived amongst the cultures, first of Global Corp, and then the Ministry of Defence, full-time, each for two years. Some names and details have been changed for reasons of confidentiality.

As a management consultant, I was in many respects a genuine ethnographer, since I was both part of these cultures and yet remained an “outsider”. Interpretation of the narratives begins in Chapter 10.

Field 1: Global Corporation

Context and Timeline

These tales take place between 1997 and 1998 in a large UK plc with operations worldwide. The context is a supply chain consulting project.

Tales

Board Room, Trafalgar Square

March 1997, mid-afternoon. Cockspur Street, just off Trafalgar square. Offices of Global Corp., an FTSE 100 multinational. A neo-Georgian building, quite grand.

The Chief Executive’s PA ushers us into the office, takes orders for tea and coffee and reassures us that “Chris and David will be along in a few minutes.”

Chris Cook’s office fits all the major company clichés. It is located on the top floor of the building and has a huge circular window with panoramic views across London. A large antique desk and leather bound chair are placed by the window. Original oil paintings decorate the wood-panelled walls. The room is large enough to accommodate about twenty people, but is unmistakably Chris’s domain. In the centre of the room is a large table with eight chairs, also antique. The furniture probably dates back to the founding of the company over a hundred years ago. To the side of the room is an antique drinks cabinet, fully stocked and with fine crystal. I surmise that it is not purely for display.

I am there with Ted Watson, who is the KPWC Audit partner for Global. Ted has known Chris for decades. Since he was a humble audit accountant and Chris was a production supervisor. They’ve both got something to celebrate. Chris has been promoted recently to Chief Exec (from COO) and Ted has become head of KPWC Audit in the UK. They probably have quite a few tales to tell about each other. Ted has always courted controversy, his outrageous behaviour fortunately being compensated by spectacular talent, and since Chris and Ted are pals, it is certain that they will have got into some embarrassing scrapes together.

For some reason, Ted, has taken me under his wing recently. Partly, perhaps, because he sees me as a bit of a rough diamond like himself. Maybe it's because we're both working class lads from Stoke. Then again, it could be because of purchasing. I've spent considerable time and energy persuading Ted of the value of selling purchasing as a consultancy service to clients. Bottom line benefits. Return on investment. Accountants catch onto this stuff pretty quickly.

Also in the room are two more KPWC consultants. Peter Leather is our HR guru, and Peter Scott is the Finance expert.

Basically, the context of the meeting goes something like this. Ted wants Chris to buy some consultancy. Ted has tried to get Chris to tell him where he needs help, but Chris doesn't want to make it that easy for him. Instead, he has set us a challenge to come and tell him what we can offer, and if he likes it, he'll buy it.

The coffee arrives in china cups on a silver tray. We wait a little longer.

David Healy arrives, alone. David is Chris's right hand man. His job title is Strategy Director, but in essence he is Chris's fixer, his eyes and ears and his detail and implementation man. Most Chief Execs have one. But there's no sign of Chris.

David shakes our hands and sits down. He is a small man with piercing eyes. Businesslike, with a determined manner. It is immediately obvious that he is not going to waste a moment.

"Chris has been delayed. Let's start." Says David.

First on is Peter Leather. Peter talks about team building, culture change, recognition. It's pretty obvious that David is losing interest rapidly. David lets Peter continue for about ten minutes, and then cuts him short.

"I don't think that this is something that we are interested in doing at the moment, Peter, thank you."

Next on our schedule is Peter Scott. Peter has prepared some materials on benchmarking the finance function. I feel slightly sorry for him. David has a finance background. This is going to be like trying to sell granny on how to suck eggs.

Sure enough, David gives him a hard time. And since Finance is David's home territory, some of the challenges hit home. Peter struggles through his presentation. You can see that he would rather be somewhere else.

Just as Peter finishes his spiel and sits down, Chris Cook enter the room.

Chris is a huge man, both in height and width. He is clutching a large cigar.

"Have we got on to the purchasing presentation yet?" He says, in a loud deep voice, immediately commanding the room.

"No", says David, "but we are just about to."

Chris sits down, rapidly shaking hands as he does.

So, it's my turn. I stand up and launch into it. Ted has helped me to prepare.

My slides are pretty short and to the point. The first one says: "Ten million dollars. Five months." Nothing else. Chris looks interested. So does David.

The next slide is a picture of the US, showing the locations of their twelve electronics plants.

“You’ve grown this business in the US through acquisition. All these sites buy the same things. Completely independently. You can’t possibly be getting the best deals”

This is not a guess on my part. We are their auditors. We *know* that this is a fact.

I move on to some more detail about why they need our help to do this, that we’ve done it before. It’s mostly common sense, but it’s also a lot of work. Chris and David are now fully engaged. Eyes lit up. Asking questions, considering possibilities.

Ten minutes in, Chris asks: “How much would a project like this cost?”

I glance at Ted. This is a good question, and one Ted and I had omitted to discuss. Trying to keep my expression blank, I say “About a million dollars.” I’m hoping that a return of ten million on an expenditure of one, will look compelling.

At this stage, Ted is trying hard not to smile. The two Peters look dumbstruck. In ten years in consulting neither of them has ever seen anything like this before.

Then the conversation takes an unexpected turn.

Chris says to David: “Why should we just do this in the electronics division? The rest of the business is not much better at purchasing.” The two of them debate this for a couple of minutes and come to the conclusion that the electronics division would be a good place to start.

Chris looks me hard in the eye: “Are you sure you can do this”.

I try to give him my most confident look back: “Yes, I’m sure”. Suddenly the stakes have been raised.

Chris draws the meeting to a close. “We’re interested in the purchasing. We’ll need a proposal, of course.”

Joe’s Golf Clubs

August 1997, Minneapolis, USA. Afternoon. Offices of the Electronics Division of Global Corp.

We have set up our project office in the room next door to the purchasing department at Allied Circuits, one of three Global Corp companies in the Minneapolis area. “We” are myself, Adam Bennett, thirty, a diligent and friendly manucian and Robert Gotto, twenty-five, a bright Cambridge educated engineer, an attentive worker and one of the wildest party animals I have ever met.

Next door is the domain and power base of Joe Reiner, Materials Director, Allied Circuits. Before the company was acquired by Global, Joe was one of the owners of the business. I expect he made a tidy sum. He probably doesn’t need to work. Joe is in his mid-fifties, a little overweight, with a bushy moustache. He has Germanic/Scandinavian features, quite common in this part of the US. His demeanour is avuncular and he seems popular around the place. Everyone knows that Joe can come up with tickets to football and baseball games, concerts, pretty much anything, courtesy of the suppliers.

Joe’s approach to managing purchasing is a little unusual. It seems to be a mix of a small amount of the occasionally radical, even brilliant, but with a sizeable proportion of “could do better”. Here’s an example of the potentially brilliant. One day, I was talking to Joe about drills. The plant makes printed circuit boards, and to produce one of these boards, hundreds of tiny

holes have to be drilled. The drills which do this come in dozens of different sizes. They have to be stored and looked after. The correct quantities need to be held in stock. They are used in an automated production process, fitted to robot arms. They have to be fitted to the robot arms carefully. The drills need to be re-sharpened regularly or they will break. A drill breakage is bad news, since it means an expensive circuit board has to be scrapped. Joe described how he tackled this situation:

“I got thinking about this, see, and I realised that we don’t want to buy drills. What we need is *holes*, not drills. So I got to thinking about how we could buy holes.”

So this led Joe to a different arrangement with the supplier. Joe has turned over every aspect of looking after the drills to the supplier. The supplier manages the stock of the drills. The supplier checks the drills and sends them off for re-sharpening when necessary. The supplier’s staff even load the drills onto the robot arms in the production process. Now, this way of thinking makes a lot of sense. Define what the value is to your company and pay the supplier for the value delivered. I was sure that now, under the new arrangement, Joe would be paying the supplier a price per good hole successfully drilled. In fact I believe that this is the principle that Joe was aiming at when he described it to me. But when I looked into the detail, this was not happening. Joe is still paying a price to buy a drill, and another price to store it and re-sharpen it. The whole process of paying for drills is even more complicated than it was before, and more difficult to check.

So. A great idea but not quite followed through to a logical conclusion.

I found the same in the plating process. The concept was “price per square foot” (of good, plated board), but the payment loop did not entirely follow this logic.

But let’s get back to the situation on this particular day. I have entered Joe’s domain, the materials/purchasing office. Joe has four staff in his office, but their roles are entirely administrative. None of them can tell me anything about prices, negotiations or contracts. They have a rudimentary computer system, but purchase orders are all typed up from requisitions produced by Joe.

It is an unusual day, because Joe is in the office. In the last month, this is only the second time I have seen him in the office. On occasions when I have tried to find him, one of the administrators, who also acts as his secretary will say: “Joe’s not in the office today”. No more detail is ever offered. On occasions, I have pushed my luck and asked: “Could you tell me where he is please?” to which the only answer I ever get is “He’s not in the office.”

I am sitting at one of the desks in the purchasing office, hoping to speak to Joe when he gets off the phone. His office door is open slightly. Nobody else is around. It is 4:30 pm and the others have gone home. I overhear a phone conversation between Joe and one of the current suppliers:

“Yea, we’ve got this purchasing project goin’ on right now, but don’t you worry, whatever happens, you guys will continue to get my business.”

I’m sure that Joe has not heard me. I wait until I see him hang up and then stick my head round the door and ask if I can see him for a minute. I have some questions for him about the purchasing project. I decide not to mention the overheard phone conversation.

As I sit talking to him in his office I notice something strange. There are six full sets of golf clubs in his office. In nice golf bags. All new and all identical. I find this rather distracting, but decide not to talk about it. I remember hearing from another source that one of the main suppliers takes the US chief executive and his board away for a week’s golfing holiday to the Caribbean each year.

“Out of line, pal”

Spokane, Washington State, USA, October 1997. Offices and factory of Global Corp Electronics Division.

Electronics companies spend a lot of money on “clean room supplies”. Clean rooms have specially filtered and purified air, to avoid contamination of the electronic devices. People working in the clean rooms have to wear special suits and gloves. The supply of these suits and gloves turns out to be a big cost reduction opportunity for Global Corp. Our initial research shows an opportunity of at least 30 percent, by selecting a single supplier across all the US locations. This is worth several million dollars a year to Global Corp.

After more work, we narrow the search down to two potential short listed suppliers, and invite each to a half-day session in Spokane. In the morning, we are meeting AGI, and in the afternoon, Warner.

We have made it clear to the suppliers that we do not want them to make a presentation. They have submitted bids, and the purpose of the meetings is to clarify the bids and obtain any missing information or detail.

The purchasing director for the division is Jack Schultz. Jack has the build of a wrestler, six feet seven inches tall and completely bald. In a previous career, he was a New Jersey cop. He walks with a limp, and although I have never discussed it with him, I suspect this may be an injury from his police days.

We greet AGI and take them into the meeting room. AGI are not currently a supplier, but are keen and seem well prepared. As requested, they do not make a presentation. Jack questions them pretty hard on some of the detail of their bid. They are able to answer. There are two questions which they cannot answer, but they commit to a response in writing by the following day.

In the afternoon, Warner arrive. They already supply one of Global’s sites (in Minneapolis). On arrival, they launch into a presentation. This seems odd since we had specifically asked them not to do so. The lights are dimmed and they talk us through a slide show, mostly giving background about the company. At one point, I look across at Jack. Despite the poor light, I can see that he has fallen asleep. About half an hour later, the Warner team finish their pitch. Fortunately, Jack regains consciousness just as the lights come back on. The Warner team ask us if we have any questions about their bid. Jack says no.

I find myself in a quandary. We’ve asked AGI some tough questions about their bid. If we are to be even handed in our selection, we need to ask Warner the same questions. But Jack shows no intention of doing so. I think back to Joe Reiner’s phone conversation, which I overheard some time ago back in Minneapolis. Joe had promised Warner they would get the business whatever happened.

I decide to speak up. I ask Warner the same questions that Jack had asked AGI in the morning. I know Jack will not be happy, but it seems the right thing to do.

Warner answer the questions. It’s time for a coffee break. Jack gestures to me to step outside.

We stand on the steps outside the building. Jack towers over me and glares. His huge head is only six inches away from mine, but because of the height difference, I have to tilt my head back to look up at him.

Jack: "You were out of line in there, pal!"

Howard: "What do you mean?"

J: "I didn't like the questions you were asking them. It's not right, you were being too aggressive!"

I'm thinking to myself, here is a huge guy, towering over me, glaring, looking like he's about to punch me, and he's telling my that *I* was too aggressive....

H: "Jack. I only asked the same questions that you asked AGI this morning. I was just trying to make sure the process was even-handed."

J: "I don't care. I'm telling you, you were out of line!"

We both stand in silence for a few moments. I'm still trying to figure out what is going on here. Have I really stepped out of line, or is there something else going on? In a way, I certainly have stepped out of line. I'm the consultant. It really isn't my place to ask the supplier questions. And yet, it is still bugging me. The whole situation, the incumbent supplier being promised they will keep the business, the competitor being grilled, the incumbent supplier getting an easy ride. I know I am not acting out of logic as I take up a new line of discussion with Jack:

H: "Jack, I want to talk to you about something else."

J: "What?"

H: "We know from the bids that Warner's prices are not competitive with AGI. I want you to tell them that they have to improve their prices."

J: "I'm not doing that."

H: "Jack, I'm concerned that what is happening here is not a fair competition. I can't close my eyes to that. I won't ignore it."

Jack walks away. Joins the others in the coffee area. Me and my big mouth. Why didn't I just let them get on with it? Now I've upped the ante. Then again, Jack knows that I'm not bluffing. I could – at least in theory – phone Chris Cook in Trafalgar Square and say I'm worried about how the US guys place their business with suppliers.

Coffee break ends and we go back into the meeting room. The Warners guys start to wrap up the discussions and pleasantries are exchanged. I am waiting to see if Jack says anything about the prices. Ten minutes pass. Fifteen. Bags are being packed. Farewells are being said. Then Jack says:

"Guys. Before you go. Just one thing. Thanks for the presentation. But we are going to have to have another meeting. These prices are not competitive. I need to ask you to look at them again."

Twenty-nine percent

January 1998, Global Corp offices, Minneapolis. Morning.

A key milestone in the purchasing project. The Chief Executive of the US division and his operating board have arrived in Minneapolis for a presentation of progress.

As consultants, we aim to keep a low profile in events such as this. It's important to get the client people to make the presentations. That way, the CEO does not have to worry about whether we are putting our "spin" on the message, or fiddling the figures. It also means that the client people have to answer the awkward questions. We do our bit before hand, in coaching

them in how to make the presentations and building up their confidence. Typically the people doing the presentations have never met the CEO before or made presentations at this level.

We file into the audio visual room. Mike Booton, the CEO, is already in there with four members of his ops board. He's British, fiftyish, dark haired and bushy browed. He's sitting near the centre of the room surrounded by his team, all Americans. The room is in lecture theatre style with a podium, microphone and a large projection screen hooked up to the pc.

The first category to report is telecommunications, fixed and mobile. Isobel is leading this category. She takes her place at the podium and describes the work which has been done. Her final slide predicts and expected saving of 28.5 percent. Next is Andrew, who is leading the transport and distribution team. The numbers are a bit more complex in this case, and more questions are fielded about potential supplier changes. Andrew gets to a summary slide showing the bottom line: 29 percent saving. Mark follows, describing progress with laminate materials. There are some surprising points in Marks presentation. For example, he points out that most of the laminate materials come from the Far East, and that the scheduling of deliveries is often a problem. It turns out that the supplier often has to send the material to the US by air freight, but has never tried to recover the substantial on-cost from these rush shipments. This is a sure sign that the supplier is making a big profit margin. Mark wraps up, and the magic number is 29.3 percent.

By now, the audience has noticed this remarkable similarity in the savings numbers. I'm just as surprised as they are. We continue through another three categories and the trend continues. Each saving figure comes out, more or less, at the 29 percent level. The Ops Board are amusing themselves by trying to guess the exact figure before it appears on the screen.

Why is this? What is driving the similarity in results? These are big reductions, so it can hardly be in the roundings. These numbers are not wild guesses, since they are based on quotations for the combined business of the electronics division. Why should the market for – say – telecommunications, show the same cost reduction opportunity as the market for distribution, or raw materials?

Eventually, the cycle breaks. Duncan puts forward a twenty percent forecast for office supplies.

Morning after the night before

Minneapolis, March 1998, evening. A team night out at a Japanese restaurant. Mixed team of KPWC and Global people. Me, Rob, Adam, Jack Schultz, Joe Reiner, Tim Kalien and Renee Riffin.

It's worth saying a few words about people in Minnesota. They are particularly conservative. Polite, reserved, church-going. Minnesota people don't tend to get excited. If someone from Minnesota describes something as "not bad", that's about as close to ecstatic as they ever get.

We meet at the restaurant at 6pm. This is normal for weekday dinner in the mid-west. I've noticed people get restless and uncomfortable if they are not eating by six. We Brits never got used to this. We'd go out for dinner at 8pm, 9pm, 10pm. The restaurants would be empty and the staff would treat us as if we must have been going through hell.

The Japanese restaurant that night is one of those places where the chef's cooking is a performing art, throwing knives around and chopping various ingredients at the table. We all have a pretty good time. Rob is his usual life and soul of the party, with the rest of us struggling to keep up with his antics.

Minnesota people – in fact Americans in business situations in general – don't drink much. But Rob is the pacemaker, and is applying his tequila drinking technique to the Sake. The rest of us try to keep up.

By 8.30pm the meal is finished and we are enjoying cocktails. Jack gets up to leave, clearly the worse for wear. He forgets the step on the way out and almost falls over. We wave goodbye loudly. Joe Reiner follows shortly after.

Having seen off the amateurs, the night is young and we are set for a serious evening. We've been pretty frugal with the expense account so far, so we don't see any problem with splashing out a little tonight. We all have hotel rooms booked and no cars to drive, so it's party time.

We catch a cab to a club in the trendy area of town. Renee tries to chat up the barman. Rob's on the tequila now, and the rest of us join him. Rob teaches me new techniques of tequila drinking that involve salt and various parts of the female anatomy. We practise on complete strangers.

Eventually, we wend our way drunkenly back to our hotel. The hotel bar has a grand piano, on which we attempt six-handed boogie whilst smoking cigars. It's well past midnight by now, and the good law-abiding people of Minneapolis are all tucked up in bed.

One of us decides it would be a good idea to go to the hotel pool. The hotel is now deserted so we have the pool completely to ourselves. We have no towels, and no swimming costumes, but we have passed the point where this would be seen as a problem. Adam strips off and jumps in. It looks like fun so the rest of us follow. Then we all crowd into the jacuzzi. We pass the time fooling around in the pool. Fortunately, nobody drowns and a good time is had by all. Eventually we get back into our clothes and stagger soggily to our respective hotel rooms.

The next morning. Headaches all round. But somehow the atmosphere between us and the Global people has changed. The smiles are warmer. The offers to help are more forthcoming. But the project is nearing its end. I find myself wishing that the previous evening had happened some months earlier.

Would ten million dollars be OK?

June 1998. Spokane Washington. Morning.

I've been up half the night. It's the end of the project and I have a meeting with Mike Carr, the US Finance Director. Our consulting fees are mostly linked to the results of the project, and today Mike will decide how much he is going to pay us.

I have spent hours preparing a detailed spreadsheet covering the savings achieved on each of eleven categories. It shows the costs at the start of the project – the base point – and the final outcome at the end of the project. In some cases the savings figure is easy to calculate and justify, since the costs have changed, the new arrangements implemented and everything is complete. In other cases the result is less clear-cut. For some categories, a number of offers have been made, but the negotiations have not been finalised. In other cases, products and materials need to be tested and approved before implementation can be completed. Overall, I would say that a third of the savings are absolutely certain, and that the other two-thirds, whilst valid, have some shades of grey – not about whether savings will be made, but about the exact savings figure that will be achieved.

So, I am sitting in reception with copious notes and my detailed spreadsheet. I am nervous about the meeting. It is the culmination of two years' work. KPWC's accountants back in the UK have been giving me serious grief because the project has crossed a year-end and they have had to book the project as a loss in the previous year. My reputation is on the line as well as a lot of KPWC's cash.

My spreadsheet is a text book version of a bargaining brief. I've considered every angle that Mike could take on every issue. I've thought about the best concessions I could hope for and the least I will agree to. I've thought in detail about how to demonstrate the value that has been delivered by the project in each category. I have talked at length with everyone involved and marshalled my arguments to support my case.

The receptionist tells me that Mike is ready. I walk down the corridor to his office. My heart is pounding. Despite my preparation, Mike holds all the power in this discussion.

Mike greets me at his office door and waves me to a seat. He sits down opposite me:

“So, we need to talk about the savings and your fees”

Howard: “Yes”

M “I was thinking the savings figure is about \$10 million dollars”

I hold back a sigh of relief. \$10m was at the very top end of my expectations. I'm not sure I can believe my luck.

H: “Well, that's a little less than I had hoped, but let me see if I can get the bosses back in the UK to agree to that.”

The meeting ends. We shake hands. Mike pours me a coffee.

Field 2: Ministry of Defence

Context and Timeline

The tales capture selected moments in a supply chain consulting project at the Ministry of Defence. Most of the scenes take place between March 1999 and December 2000. A later scene from 2003 adds further context.

Tales

“Well, thanks anyway”

March 1999, mid afternoon. Whitehall, London. A sprawling, baroque building, faced with Portland stone, dating to 1903. It is known to all in the MOD as “Main Building”. The atmosphere of the place suggests that WWII is still being fought. Austere décor, green corridors and drab walls. You can almost smell the powdered egg and hear the air raid sirens.

The consultants are led into a large meeting room on the first floor. It is also decorated in pre-war style. Dark wood and chandeliers. Traffic noise filters in from the big window. After polite handshakes, we sit awkwardly where we are placed, in a line at one end of a large mahogany table.

It has taken us six months, hundreds of pages of paperwork, and many hours of presentations, to get to this meeting. When the MOD invited consultants to bid for “Consultancy support to Future Defence Review Studies: Transforming the UK's Defence Procurement”, every large consulting firm in the UK, and many mid-sized ones, submitted bids. It has been, to use a fitting metaphor, a “war of attrition”. Now we are on the shortlist, with only one other competitor left in the battle: McBain and Company.

We know this to be the case. McBain have already been commissioned (without competition) to write an initial review of defence procurement. Their findings were, not surprisingly, that

major procurement projects were typically several years late and at least 20% over budget. They observed that such projects had no clear customers, and that decisions were taken (or more often, avoided) by committees. They found bureaucracy, delay and confusion. Their report, at a cost of about £1m, suggested that the MOD should reduce the number of phases in its project procurement process from nine to six. At no extra charge, they also suggested names for each the six phases. The report proposed that MOD set up cross-functional project teams for each major equipment procurement. These Integrated Project Teams (IPTs) would own the procurement process, work closely with suppliers, and ensure that projects were delivered on time and to budget. “Faster, better, cheaper” was the slogan. Whilst radical, by MOD standards, the recommendations were not particularly new. The US Ministry of Defense was already implementing something similar.

I am sitting at the far left of the table, nearest to the noisy window. My role is to be the procurement expert. I have never worked in the MOD, but our proposal offers to introduce best practice from industry. To my right the rest of the team are aligned. Quentin Maxwell-Jackson (stern, crisp, early forties, and a New Zealander who has managed to acquire a polished, English public school accent) has worked on various projects in MOD. Elizabeth Ransom (forty-nine, with charm and presence, intellectual enough to get away with a slightly eccentric air) is the senior partner of the team. She has a long track record with MOD and has managed to win some supporters in high places. Fran Griffiths (mid-thirties, attractive, confident) is playing the role of change management expert.

Our inquisitors are sat opposite, and at this point they introduce themselves. MOD people have a strong preference for using initials rather than words, and so we have Commodore Nigel Gold (MODPE), Nick White (DGMO)(Chair), Brig Liam Donan (MODPE), Colonel Paul Dorr (DSCC), Brian White (AORPT) and Martin Andrews, Contracts. The service personnel are wearing full uniform, including ribbons, making the civil servants and consultants look unworthy. Those at the table are the main audience, but organised along the far wall, opposite the window, is a group of observers to whom we are not introduced. It’s like being on the centre court at Wimbledon, ready to make the first serve.

The formalities over, the inquisition begins. Each of us explains why we are here, our experience and our role in the potential project. We are quizzed about particular items of detail in our proposal. Quentin’s clipped tones cover some of the work he has done on Helicopter Support and other, more sensitive projects. Elizabeth manages to do some gentle name-dropping of those in high places to earn us some brownie points. I am in the middle of explaining why I think I know something about procurement and how I can relate experience in the private sector to the MOD, when the door flies open and an unexpected character joins the scene.

Into the room ambles Bernard Brown, political advisor to the Secretary of State. He is in shirtsleeves, a bearded, bulky man, rather untidy. His entry into the room is particularly incongruous because he is carrying his lunch in both hands. He sits on the left hand side of the table – neither with the uniforms nor with the consultants, but at right angles to us both. His lunch is a cheese and onion sandwich and a packet of crisps. He says nothing. He starts to munch on his sandwich. I continue my attempt to answer the question while hoping that my jaw is not dropping too noticeably. I try to focus on Brig. Liam Conan, but out of the corner of my eye I can see the crumbs falling from the sandwich. Some are lodged in Bernard’s beard, others pepper the table top.

Five minutes further into the cross-examinations, Bernard, still with half a sandwich in his hand, speaks. Actually he shouts:

“How can you people possibly believe that you have the credibility to make this project a success! You do not have the political savvy, the gravitas, to make the changes happen. Only McBain could do this project!”

The military brass look mildly uncomfortable, as if they were not expecting this outburst themselves. After all, if KPWC are patently not capable of doing the job, what are we doing on the short-list, and what are we doing in main building? Any air of detached objectivity seems about to be lost. The brass pick up where they had left off and continue to follow their list of pre-prepared questions. Bernard's tirade hangs in the air unanswered.

Commodore Gold takes his turn in the questioning. He alludes to the fact that not all the tens of thousands of MOD employees involved in supply chain operations will welcome the changes with open arms. He asks Fran to describe how we will address and deal with any resistance to the changes.

Fran starts to explain, using a diagram she has brought with her. But it is only on A4 paper and the long table means that it is not easy for the brass to see. Bernard looks unimpressed. He mutters some words of doubt.

"Bernard, let me explain to you what I mean in a bit more detail." says Fran.

She gets up from her seat, walks across to where Bernard is sitting and sits next to him. She puts the paper on the desk, and sitting close by his side, begins to put in plain words her ideas for managing the change. It's a subtle thing, but she seems to be sitting closer than would normally be appropriate in such a formal setting. It is as if she is speaking only to him. As if the rest of the room is not there, only the brusque, overweight, rather scruffy political advisor and the attractive management consultant. Bernard is clearly not comfortable. This was not the response he was expecting. It is evidently not a typical experience for the brass either. I start to wonder what on earth is going to happen next. Has Fran just blown it? Hardly, since Bernard's earlier outburst suggests we are just there to make up the numbers. It seems we have nothing to lose.

Fran concludes her explanation with Bernard, but remains seated next to him. The brass resume their list of questions. Bernard does not speak again. Is he in shock? Eventually he wanders out of the room, apparently having lost interest, but the meeting continues.

We have been there for an hour and Nick Whitey (DGMO, Chair) starts to wrap up the discussion. We shuffle our papers and put them away, smiling politely.

As we leave, the brass line up and shake our hands. They seem genuinely friendly in their goodbyes, but we feel pessimistic..

As Commodore Gold shakes Elizabeth's hand, he smiles and says:

"Well, thanks anyway."

Questions in Parliament

April 1999. Mid-morning. KPWC offices in Dorset Rise, City of London. Typical offices of a large accounting firm. A thirty foot high bronze statue of George and the Dragon stands outside. Fifteen foot replica Grecian urns stand imposingly in reception. Lots of space, lots of shiny metal, lots of glass. Oil paintings of the founding fathers, looking stern and Victorian, hang on the walls next to this week's chosen charity exhibit.

I am waiting with the other consultants in a ground floor meeting room for MOD DIPT to arrive. DIPT stands for Directorate, Integrated Project Teams.

We pass the time by complaining about the new biscuit policy (we don't get any unless and until a client turns up). With me in the room are Owen Bull (leading the MOD project), Robert Bolton (Leading the change management work with MOD), and Maryanne Matthews (Project Office). Owen is short, fastidiously turned out, bright and cunning. Robert is creative,

occasionally a little disorganised, and has cultivated that slightly swami-like persona of some change management consultants. Maryanne is friendly, ambitious and a little pedantic.

DIPT arrives late as usual having been delayed in Main Building. They breeze in with the minimum of formalities and are quickly followed by tea, coffee and the long-awaited biscuits. Nigel Gold (Commodore, soon to be Rear Admiral) sits at head of the table, ready to commence proceedings. His team spread themselves around, mingling with the consultants. Patrick Beazley is a career civil servant, loyal, slightly dishevelled, fully conversant with more rules than I could ever imagine. Colonel Andy Ashton is a bright acerbic Yorkshireman who rose through the army ranks quickly. He has a low boredom threshold however, and this has made the time between wars tiresome for him. Richard Jones is another civil servant, well travelled and perhaps finding his current role less exciting than others.

As usual we wade through a long list of protocol and trivia. I am finding it difficult to pay attention. However, I wake up when we reach the topic of “Industry Involvement”.

“In the previous phase of the project, the pilot phase, the level of industry involvement was ninety percent. In this phase, industry involvement is only eighty percent.” Says Nigel. “Howard, this needs to be improved quickly. What are you going to do about it?”

“Well, Nigel,” I say, trying to offer a measured and considered reply, “The IPTs are all at different stages. We have twenty different teams covering a wide range of different equipment. Some have not defined their requirements yet, whilst others are at the manufacturing stage. I think we should help specific IPTs to develop their own individual strategies for industry involvement. They need to think about what kind of relationship they need with specific suppliers.....”

“Howard, you are not listening to me. Industry involvement needs to be improved quickly.”

“But some of the IPTs are simply not ready for detailed discussions with suppliers. The people in the teams are new to the job. Bringing industry members on to the teams before they are ready could be risky. Putting it bluntly, they could get screwed.”

“I don’t want a debate about it. Industry involvement must be increased”

Nigel is not happy. We are clearly not seeing eye to eye on this matter. I’ve obviously not done myself any favours, yet I feel that I have a valid point. I am genuinely concerned that introducing supplier representatives into an IPT before it is ready could have negative consequences. Having met many IPT members, I do not believe that they all possess the skills needed to handle such situations, where many millions of pounds are at stake.

It would be a long time before Nigel forgave me for this argument, although it was only an hour or so before I realised why Nigel was so concerned about the issue.

Truth to Tell

Morning, June, 1999: the Marriott Hotel, Huntingdon. The Trainers and Simulators Integrated Project Team is holding an “industry day”. Key managers from the defence suppliers involved in flight simulators used for training purposes have been invited. The IPT Leader is looking for radical options to improve the cost/performance which the MOD obtains from its investment in flight simulators. No option is to be ruled out. It may even be possible for Public Finance Initiative arrangements to be set up, through which the equipment will be transferred to private sector ownership and leased back to the RAF as required. Fifty representatives from the defence suppliers are attending, plus twenty people from the MOD and several consultants who are helping to facilitate the event.

At 7:30 am I am sitting in the hotel restaurant having breakfast. Behind me, but within earshot, are managers from two major defence contractors. I overhear their conversation:

“Steve, tell me, are you going to tell the truth at this thing?”

“No, are you?”

“No”

Hot House Flowers

December 1999, Larch, Abbey Wood, Bristol. The headquarters of the Defence Procurement Agency, home to 6,000 MOD staff and one of the largest office complexes in Europe. Mid-morning. A small and rather cramped ground floor office with four desks. Once a week the office becomes the “hot house”. Consultants from sixty IPTs report progress into the hot house, which is then consolidated into summary report, which goes to the senior people in the Department, the Parliamentary Under Secretary, Minister and Secretary of State.

Robert Bolton and Richard Jones are sitting around a computer screen at one desk, and I am sitting with Col Andy Ashton at another. Robert has arrived this morning with a new and rather spiky haircut. The rest of us are enjoying this at his expense.

Andy: Robert, can I just say that your new haircut is the funniest thing that has happened so far today!

Richard: I think he is trying to be young and trendy

Howard: Oldest swinger in town. He turns forty next month.

Robert: You’re only jealous Howard!(I’m bald)

Robert wanders out to get coffees. Knowing him, he’ll probably come back with cakes, crisps and all sorts of other junk food as well.

Howard Andy, have all the Flash Reports come in?

Andy: Except for Henry Needler. As usual.

H: Let’s get started then.

We start to wade through a pile of thirty reports. The form has a standard layout and structure, covering overall status, what went well, what did not go well, what quick wins were achieved, status against key milestones, and planned activities for the coming week. Everyone in MOD is used to producing regular reports – usually referred to as “sitreps”. But these reports are different in at least two ways. Firstly, there is a degree of informality about the form itself – smiley faces for things that are going well and so on. Secondly, the reports are also a two-way communication. Each report gets a prompt reply, and the consultants can use the reports to ask for help.

The first one is from the Nuclear Weapons IPT.

Andy: “This one’s from your lot, Howard. What do you think?”

Howard: “Well, it’s all pretty positive. I like this comment: ‘Team found partnering workshop material to be beneficial to achieving their long-term PPP commitment’”

Andy: “Well it sounds good, but what does it mean?”

Howard: “I take your point. It is a bit apple pie, isn’t it?”

Andy: “Should we challenge them about it?”

Howard: “Let’s not. They’re not asking for help, and they seem confident. We’ve got twenty-nine more of these things to get through.”

Andy: "This one's a pager job then?"

Howard: "Yes"

We have three levels of reply to IPT Flash Reports. The ones that are on track just get a short pager message, something along the lines of thanks for the report and well done. Teams who are not on track, or who are asking for help get an email. Those with urgent problems get an immediate phone call.

H: "Who's next?"

A: "Bowman"

Groans echo around the room. Including Robert who has just returned with coffee, chilli flavoured roast peanuts and crisps.

Bowman has had lots of adverse publicity in the press and is singularly the most unsuccessful IPT.

A: "Looks like Aiden's doing his best, but he's drawn the short straw with this one. The best we can do is offer him some encouragement, tell him to keep his chin up."

H: "Owen is going to talk to Nigel about it today. Quick email and move on, I think."

A: "OK submarine support is next."

H: "I've got a question"

A "Fire away"

H "What is it? I mean what equipment is "submarine support"?"

A: "Basically, it's a small submarine to rescue the crew when a large submarine sinks or gets stuck"

H; "Oh, I see. Sorry for my ignorance. All is now clear. Does that happen very often?"

A: "More often than you might think."

I've made a mistake here. Andy loves telling stories and I've given him a chance to go off into a few favourite ones. In moments, we are in the world of overheating nuclear engines and other war stories. To be fair to him, he's a good storyteller and it helps to pass the time. Especially when we still have twenty-seven more flash reports to get through. Richard overhears, breaks away from his flash reports, and throws in a few vignettes of his own. I think half the things they tell us are "fishermen's tales".

Back to the reports and next up is Sea King Helicopter IPT.

A: "What's this? They've sent us an extra page..."

H: "Success Story. We can use this. It's good publicity for Nigel and Owen."

The Sea King team's extra sheet tells the story of their last four weeks. It starts with a pessimistic quote:

"What's the point of an IPT for Sea King. We have a 30 year old aircraft, a declining resource line and a monopoly supplier. Everything is fixed, we can't change anything. This is just a farce."

It then goes on to some new quotes a month later:

“It has taken 30 years to get everyone associated with this aircraft around the table. It is only today that I have realised the issues we face and I am now willing to adjust the OR to support the programme’s success”

“I went into one of our suppliers last week and demanded a five week turn round. They are still recovering. This IPT stuff is pushing back the boundaries. Things are possible”

The four of us continue to wade through the reports. Sending pats on the back to some, offering help to others. Occasionally dishing out some chastisement:

A: “Here’s another of yours.”

H: “This looks suspiciously similar to last weeks report.”

A: “You’re right, hardly changed at all”

H: “Right. Lets send them an email: “Thanks for changing the date on last weeks report”.

A: “ A bit sarcastic?”

H: “It’s OK, I know them, we’ll get away with it.”

Another team of consultants is having a particularly torrid time. The IPT leader is challenging them hard, claiming that they are not contributing any value to the team. Andy picks up the phone and calls one of the consultants. After half an hour’s conversation, he arranged to visit them the next day to see how we can help them win over the IPT leader,

Coming up to lunchtime, Andy is telling us stories from the Gulf War. About how they had to shoot all the dogs because they were eating the corpses...

Over lunch we gossip a little. One of the IPT Leaders was recently asked to make a presentation to a group of “Three Stars”. During the presentation, he allegedly made the comment that he didn’t “believe in” the smart procurement initiative. It now seems that the person is being removed from the job of IPT Leader. Our consensus is that this was a good test of MOD’s resolve and we are somewhat relieved that MOD has acted in this way.

The day continues in the same vein, reviewing flash reports, composing feedback, taking stock of progress, until about 4pm, by which time we have finished responding to the flash reports. We now turn to writing the Summary Report. Given the audience for this, and the political sensitivities, it requires great care and the four of us discuss and debate every phrase. Are we getting the overall message right? How will MOD top brass and ministers react?

It takes only one person to type and email the report, but we always huddle around the screen whilst this final task is done. When the email is gone we leave together, still mercilessly taking the mickey out of each other.

The Triumph Stag of the Skies

RAF Brampton, December 2000, mid morning.

I am visiting the consultants for the Tornado IPT. Some people in the RAF have a nickname for Tornado: They call it the Triumph Stag of the skies. Fun, exciting, a classic, but a bit of a handful from a maintenance point of view.

Something significant has emerged from the Tornado IPT. It is transforming itself into the “Tornado Tiger Team”. No longer simply an MOD team which invites industry representatives, it has become a truly joint MOD/Supplier team – the supplier being BAe Systems.

The catalyst for this was when CDL (the Chief of Defence Logistics) set a challenge of reducing support costs by twenty percent. After much discussion, the decision to form a joint team was taken. The team has joint leaders – Wing Comm. John Hancock from DLO (The Defence Logistics Organisation), and Nick Kilner from BAe Systems. Members of the team are co-located at RAF Brampton.

I am met at reception by the consultants who are supporting the newly formed team – Ian West and Catherine Mathers. They take me to meet the team members.

In a large bustling open plan office are about thirty people, some MOD and some BAe Systems. A few are wearing uniforms, but for the rest it is impossible to tell which organisation they are from. The atmosphere is busy and purposeful. Half completed plans and flow charts cover all the walls.

As I talk to some of the people on the team, I start to get an understanding of the scale of opportunities for cost reduction and performance improvement. Much of it comes from removing arms-length bargaining and second-guessing by each of the others motives, intentions and capabilities. For example, the joint team have discovered that if BAe Systems can commit to achieving some specific details of its technical obligations, where currently there are grey areas, then RAF can amend its plans for maintenance of the aircraft, delivering millions in cost savings. Overall, when all the opportunities are added up, the total figure is startling.

As I drive home from Brampton that afternoon, I am genuinely pleased and surprised to see the emergence of a joint team. It's been a long journey from Bernard Brown and his cheese sandwich

Master Class

Early afternoon. Abbey Wood, near Bristol, January 2000, well into the project. Specifically, we are at Stanley Farm. It might have been a farm once but now it is a training building on the outskirts of the Abbey Wood campus, about half a mile away from the main office complex.. It is a single story building with various meeting rooms and lecture theatres: laid out much as you would expect to find in any corporate training building.

We have been working with MOD for almost a year. Twenty-five of our consultants have trained twenty-five internal MOD service people and staff to be internal consultants, providing support to the Integrated Project Teams. In general, the relationships between the KPWC consultants and the MOD people are good. There is a feeling that the project has been a positive experience.

A new wave of IPTs is about to be created and, for the first time, many of the IPTs will be supported by MOD internal consultants alone, without direct support from KPWC. The Master Class is a three-day training session, designed by Robert Bolton and me, to help the internal consultants develop skills which will aid them with this work. The three days is a mix of lectures, exercises and practice sessions. Robert and I lead the sessions, supported by four other KPWC consultants.

The internal consultants are a mix of upper-middle grade civil servants and service people at Lt Col or Lt Cdr level. They have had to get through a stringent selection process to become internal consultants. Many of them see it as a good opportunity to learn new skills. Unusually, no-one is in uniform today. We have taken the opportunity of the training session to apply an informal dress code.

The session in progress is about “defining breakthrough”. Within the project, we have given the term “breakthrough” a particular context and flavour. It marks a specific period of time – the first twelve weeks in the life of an IPT. During this time, we aim to move each IPT toward

achieving breakthrough. We ask the internal consultants to break into three groups to define what breakthrough means..

Robert and I circulate and listen to some of the discussions. The conversations seem a little aimless at first but eventually some themes start to emerge.

Lt Col Adrian Prince is an archetypal military man, even out of uniform. His posture, expression and language carry the hallmarks of army training.

“It is all about getting the IPT to become a team,” says Adrian.

This gets nods of agreement around the table. Similar ideas are thrown into the flow of the conversation.

Steve Wilson, young, bright and intense, ups the ante. “Not simply a team but a high performing team.”

The conversation flows back and forth until one group starts to work back from this goal to establish some earlier milestones in the breakthrough process: “The team members need to establish some common ground” says Fred Stock, relaxed and smiling.

The conversations cycle in similar vein for a few more minutes. Robert looks relatively relaxed about how the session is going. But I am far from relaxed. No one has mentioned *results!* It seems that we are about to launch an expensive and difficult twelve-week exercise which will produce twenty high-performing teams, without any evidence that they will be focused on delivering anything. I am starting to imagine the next twelve weeks turning into a touchy-feely tree-hugging exercise. Whereas what the client – or at least the taxpayer – really needs is improved procurement, leading to performance, cost and time benefits.

I do some whispering to Robert and the other external consultants about my concern, but I seem to be the only person in the room who is keen that the internal consultants associate breakthrough with results. My instincts are telling me that if I challenge the internal consultants about this, it will not be well received.

We call the discussions to a halt and the three teams feed back their views. As expected, no mention of financial results. Robert and I debrief the findings, and I signal that I have something to say.

“You have all referred to building the IPT into a team – several of you have said you want to make the IPT a high performing team. Surely a high performing team must, by definition, deliver results? And yet no one has defined breakthrough in terms of results. And so I have a question for you. What results do you expect the IPTs to deliver in the twelve week period?”

I pause, leaving a space for the MOD people to discuss and air their views. I am surprised at their response:

“We can’t do anything specific in twelve weeks. It’s too short a period of time”

“There’s no way. Not in twelve weeks”

“Are you talking about quick wins? I don’t think quick wins are possible in this situation.”

“Not here. Things take a long time. There are too many steps to be covered. It’s just not possible.”

“It would take years to deliver a measurable improvement”

“The benefits will only come much later!”

The mood of the room has changed. Some people look switched off by the discussion. Others look hostile, even indignant. The tone of voice of the comments ranges from mild frustration to what seems to be genuine exasperation.

I am not going to let them get away with this, so I decide to push a bit harder. I go to the flip chart. The room is hushed. I pick up a pen.

“Look, we know what your IPTs will spend in a year. It’s very easy to work out what they will spend in twelve weeks”

I do some sums on the flipchart. Their IPTs will spend two billion pounds during the next twelve weeks.

“So, your IPTs will be writing cheques to suppliers for two billion pounds over the next twelve weeks. Do you believe they will be doing this perfectly? Do you honestly believe that they couldn’t improve by- say – one percent? One percent would be twenty-five million pounds.”

As I write the figures on the chart, I am thinking to myself that that amount would probably go a long way to building a new hospital.

Dave Smail a large and boisterous civil servant, finds a hole in my argument: “Actually, the MOD doesn’t write cheques to suppliers.....”

His point is something about direct debits and other forms of money transfer. I am trying hard not to let my frustration turn into anger. Don’t these people realise that Purchasing Managers in the private sector have to deliver substantial financial improvements in a lot less than twelve weeks, and that in many cases their jobs depend on it?

I try again.

“I am not denying the importance of building teams, of generating enthusiasm and commitment. But how can we claim to have made a breakthrough unless each team can point to a hard, measurable achievement? Surely we – you – should be working with each team to identify specific, hard measurable improvements that can be delivered as part of the breakthrough process?”

It is obvious that I am not getting anywhere. In fact I am not sure that I have moved their views at all. It’s even possible that they are now more hostile to the idea of early gains than before I started to speak.

A good point for a break, and – mercifully – a coffee break is scheduled for this point.

Over the coffee break, Robert and I discuss what happened. Robert tries to reassure me that at least we have cleared the air and that we can now continue the day productively, perhaps returning to the issue later. But then he gets into his change management guru stuff:

“Howard, the problem is that you are trying to have the wrong type of discussion. They are just not ready for this yet. You are trying to have a conversation with them about action, but that is the wrong level for them. You *have* to go through the other levels first. We need to establish relatedness, possibility...”

I respect Robert, so I don’t dismiss his comments, but I do wonder if some of it is just pseudo-academic mumbo-jumbo. Surely I have logic and common sense on my side? Why are the internal consultants so resistant to the idea of delivering results?

In a quiet moment, as I drink my coffee, I start to realise that they may be afraid. After all, they are only consultants, like us. They can’t actually deliver anything directly, all they can do is support the IPT and the IPT leader, give them ideas and a framework for doing things. And –

despite the Defence Review - is there really any incentive at operational level, to save money in defence procurement?

Another perspective also occurs to me. Perhaps the internal consultants see the IPT rollout project as an *organisational restructuring* project. Most public sector people understand re-organisations. It is a tactic that Governments have used for centuries, often as a placebo when there has been a lack of genuine change.....

They Hate Each Other”

February 2000, MOD Abbey Wood, lunchtime.

I am having lunch in “Larch” one of the office complexes at Abbey Wood with Fred Stock and Lt Col. Paul Noakes, two of the internal consultants, and Robert Bolton. We are sitting on cafeteria-style chairs in a spacious and airy atrium. Abbey Wood is light and modern in contrast to Main Building, but rather soulless. We are discussing the sustainability of the MOD’s Smart Procurement initiative.

Fred: The trouble is, they hate each other!

Robert Do you mean DPA and DLO?

DPA is the Defence Procurement Agency. It employs over five thousand people and is responsible for procuring all major defence equipment: from aircraft carriers to submarines. Its annual budget is over £10 billion. The DLO is the Defence Logistics Agency. It employs thirty thousand people and has a budget of almost £4 Billion.

Fred:: Yes, I do but I also mean top men in both organisations, (General Sir) Sam Cowell and (Sir) Robert Warton. Their personalities are so different.

Howard: I’ve noticed some animosity from time to time.

Paul: You have to admit that the way we are organised is crazy. One huge organisation, DPA, buys an aircraft carrier – negotiates the contract, finalises the prices – everything. Then another huge organisation hundreds of miles away, DLO ,takes responsibility for ordering the spares and support services for the same equipment! The people are different, the organisations communicate badly and the defence contractors must love it!

Robert: You mean that they can let DPA think that they have screwed them right down on the price, and then get their own back through DLO and make a fortune on the spares in the long run?

Fred: Err, well frankly... yes.

Paul: DLO hates DPA, because DPA makes decisions which have a huge effect in constraining DLO later. DPA think that DLO should make more effort to get involved and are using them as a scapegoat.

Howard: Why have we got two separate organisations in the first place?

Fred: It’s historical

Howard: Why doesn’t MOD merge them?

Fred: Confidentially, I think it should, and I think it will – one day. But in the recent MOD reorganisation it was a step too far. And then you have to take into account the people at the top of both organisations. They are unlikely to be in favour of merging , since there could only be one top job.

Robert: Smart Procurement was meant to fix this problem. The IPTs are supposed to stay with the equipment for its lifetime. The IPT is supposed to cross over from DPA to DLA – the same team continue to manage the procurement.

Fred: That’s right. We call it the “conveyor belt”.

Paul: But let’s introduce a bit of reality into the discussion. MOD people hold two-year fixed term posts. No individual is around long enough to make this dream a reality.

Fred: And the culture of MOD means nobody is prepared to move. So on the odd occasion when someone is asked whether they will move with the IPT as it makes the transition from DPA to DLO, they say ‘Fine, so long as I can do it from two hundred miles away in Bristol. I’m not moving to Wyton.

Robert: So in the old system, we used to talk about “throwing the equipment over the wall” – from DPA to DLO. Now what happens is that we try to throw the team – the IPT over the wall. Only without the people?

Fred Yes, that’s it. A bit of a mess really.

Curry in the Barn

May 2003. Robert Bolton’s house, Hopfield Barn near Malmsbury.

It’s 8 o’clock in the evening. I’m sitting in Robert and Sarah’s dining room eating curry, whilst his kids watch Friends on the TV in the living room.

These days, Robert and I get to meet up only a few times a year. He’s still at KPWC – now Atos KPWC Consulting - and still does work for MOD, amongst others. I have moved to another consulting firm. I’m taking the opportunity to catch up on what has happened to Smart Procurement, apart from a change of name, to Smart Acquisition.

Robert: “It took about two years before the IPT’s really understood that they were empowered. Gradually, IPT Leaders started taking decisions.”

H: “And what is it like now?”

R: “It really has been quite a radical change. Being an IPT Leader is now a plumb job, with lots of power. They are seen as people with significant influence. Not just in terms of procurement, but in terms of how the MOD goes about its business.”

H: “What about the benefits? You remember that occasion in Stanley Farm when I got all excited because nobody was focusing on hard benefits?”

R: “Well the Iraq war is seen as a real success story for smart acquisition. Contractors were close up to the front line, getting things working again. It was a very different way of doing things and the Forces appreciated it. It allowed them to be more effective and get on with the job. The consensus is that procurement has improved, that smart acquisition has worked.”¹

H: “What about value for money? Does MOD now get better value for money?”

R: “That’s really difficult to say. I don’t think there is an effective way to measure. It may even be impossible to measure.”

H: “So what will happen next?”

¹ Since this narrative was penned, there have been a number of reports on the UK press that have been critical of some of the logistics process during the Iraq war. In particular, it has been alleged that some soldiers were without important equipment in dangerous circumstances. However, this narrative above is faithful to the conversation which took place.

R: “Well, that’s interesting. There’s now a feeling that Smart Acquisition has gone too far. That in decentralising decisions out to the IPTs, some of the spending power – leverage – has been lost. Plans are under way to re-establish a larger and more powerful, centralised procurement function.”

Summary

A series of subjective narratives based on longitudinal experiences have been presented here. Interpretations will follow in Chapter 10.

CHAPTER NINE: HOW THE THEORETICAL PERSPECTIVE EVOLVED

Father: “ Well, so I tell stories, and sometimes Gregory is a character in these stories, and sometimes not. And often the story about a snail or a tree is also a story about myself and at the same time a story about you. And the real trick is what happens when the stories are set side by side...”

Daughter: “Parallel parables?”

Father: “... then that is the class of stories we call *models*, which are generally rather schematic and which, like the parables presented by teachers of religion, exist precisely to facilitate thought about some other matter.” Bateson (1987), p35

Introduction

Up to this point, the Thesis has followed a (relatively) orthodox structure. An area of research interest has been outlined, current theories reviewed and the proposed research approach introduced. In the previous chapter, what would traditionally be called research “data” were presented.

It might be reasonable to expect that in this chapter we should now examine the “data”, using the theoretical frame introduced in Chapter 5.

However, during the process of carrying out the fieldwork and trying to make sense of my experiences, I found that my intended framework, outlined in Chapter 5, was not very helpful. I came to realise that this framework was based on a “cybernetic” model of human knowing which was incompatible with the participatory and non-linear world-view I was developing.

It is therefore necessary to go on a detour in this current chapter. Here, I describe how I wrestled with the original theoretical framework, trying to get it to fit my intended world-view and struggling to tease out some explanatory possibilities. This led to some highly speculative theoretical and philosophical musings, rather than any “positivist certainties”. As a result of the limited possibilities of the model, even after further development, I had to draw on further theory *during and even after* the fieldwork, in order to try to address my research questions from my stated philosophical position.

The Theoretical Perspective in 1995

My initial attempt to build a theoretical framework for the research was outlined in Chapter 5. Key elements were:

- A two-dimensional grid, to help in thinking about the cultural context of buyer-supplier relationships. The dimensions of the grid were the level of codification and diffusion of information. The segments of the grid were given cultural categories: Fiefs, Clans, Bureaucracies and Markets. Much work on organisational culture¹ has focused on the entire organisation. My interest was largely in the sub-cultures within and across organisations: fiefs in boardrooms and clans in project teams, for instance.
- A set of hypothetical roles related to buyer-supplier relationships and located within the grid. I suggested a set of traditional roles which appeared to be common in organisations, and proposed a new set of new roles which appeared more appropriate for an innovative organisation (professor, anthropologist, negotiator, strategist, witch doctor).²
- A conceptual model showing how these roles and cultural settings might fit together in a successful innovative organisation. This drew on Womack and Jones (1994) but was largely my own.

My aim was to investigate the challenges facing a team which spanned organisational boundaries, which I termed a “cross-organisational team”. Back in 1995, the direction of my research was influenced by “Lean Thinking” (Womack (2003)), but my instincts were leading me towards a different frame of reference. I was curious about what people really did in supply chains: the complex, emotional, irrational, human mess that goes on in the world of business.

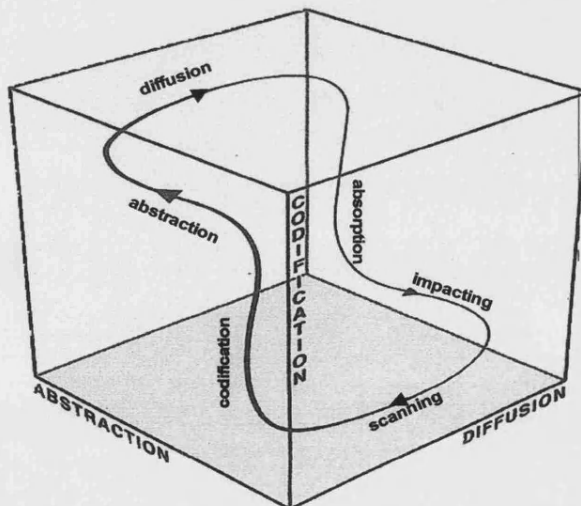
In order to make “the familiar look strange”, to capture the absurdities and the oddities, I was keen to take an anthropological perspective. My views were gradually shaped by wider reading and further reflection. This led me to continue to wrestle with the theoretical models as I describe below.

1998 – From Two Dimensions to Three

“[New intellectual structures] have to live in an underworld, an underworld of deviant professors, gifted amateurs and moderate crackpots. To this underworld I invite my no doubt somewhat alarmed and bewildered readers.” Boulding (1971) p163

Just after my transfer from Mphil registration to PhD, Boisot published an updated version of the model which I introduced in Chapter 5, introducing a third dimension: information abstraction (Boisot (1995)). The two-dimensional box had become a cube. Boisot’s model now explored how information moved around between the dimensions of codification, diffusion and abstraction in a cycle – the Social Learning Cycle. He suggested that this movement of information determined culture.³ The Boisot model is shown in Fig (31):⁴

Fig (31) Boisot’s Information Space and Social Learning Cycle (Boisot (1995))



I found the model interesting and tested its explanatory possibilities by mapping a number of other theories onto Boisot’s box, which he called the Information Space (I-Space). The model seemed to be compatible with a wide range of other theories, in that the other models could be mapped onto the I-space, providing new ways of interpreting existing theories.

I conducted some thought experiments with Boisot's box. What did the "sides" of the box represent? If I could squash the box flat, and examine each of the six sides as they were laid in front of me, what would each side represent? The results of these musings are shown in Figs (32) to (35) below.

Fig (32) Meaning-Making in the I-Space

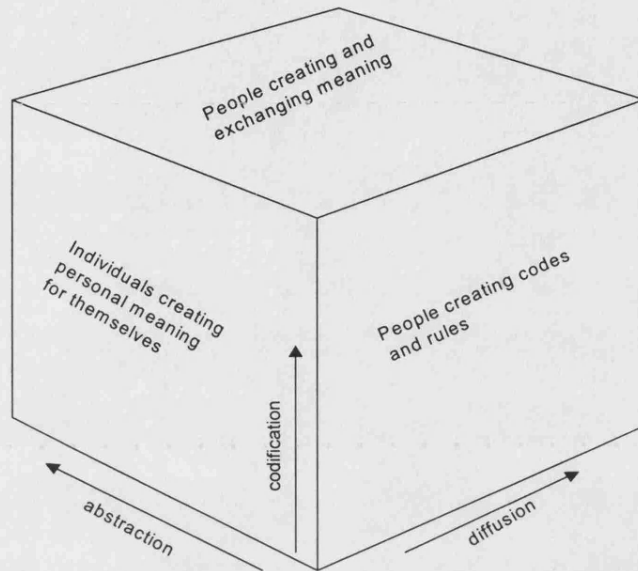


Fig (33) Artifacts in Boisot's Box

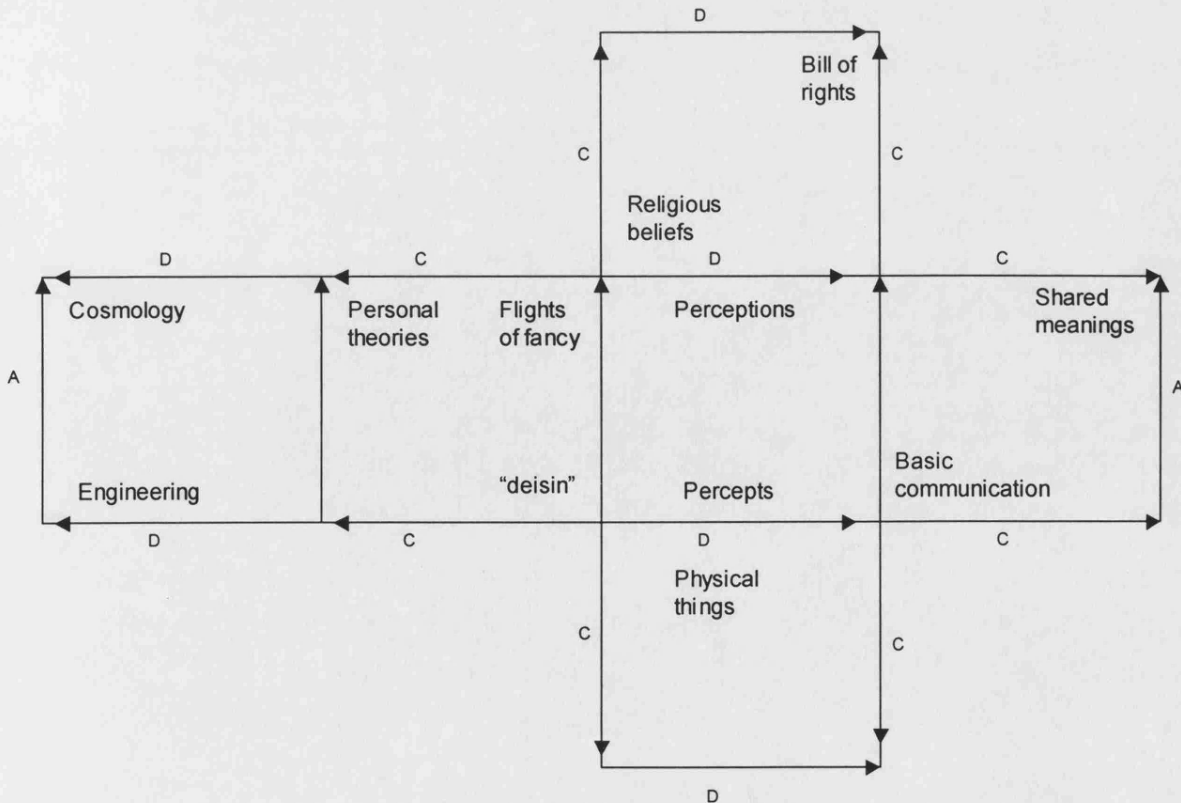


Fig (34) Levels of Being in Boisot's Box

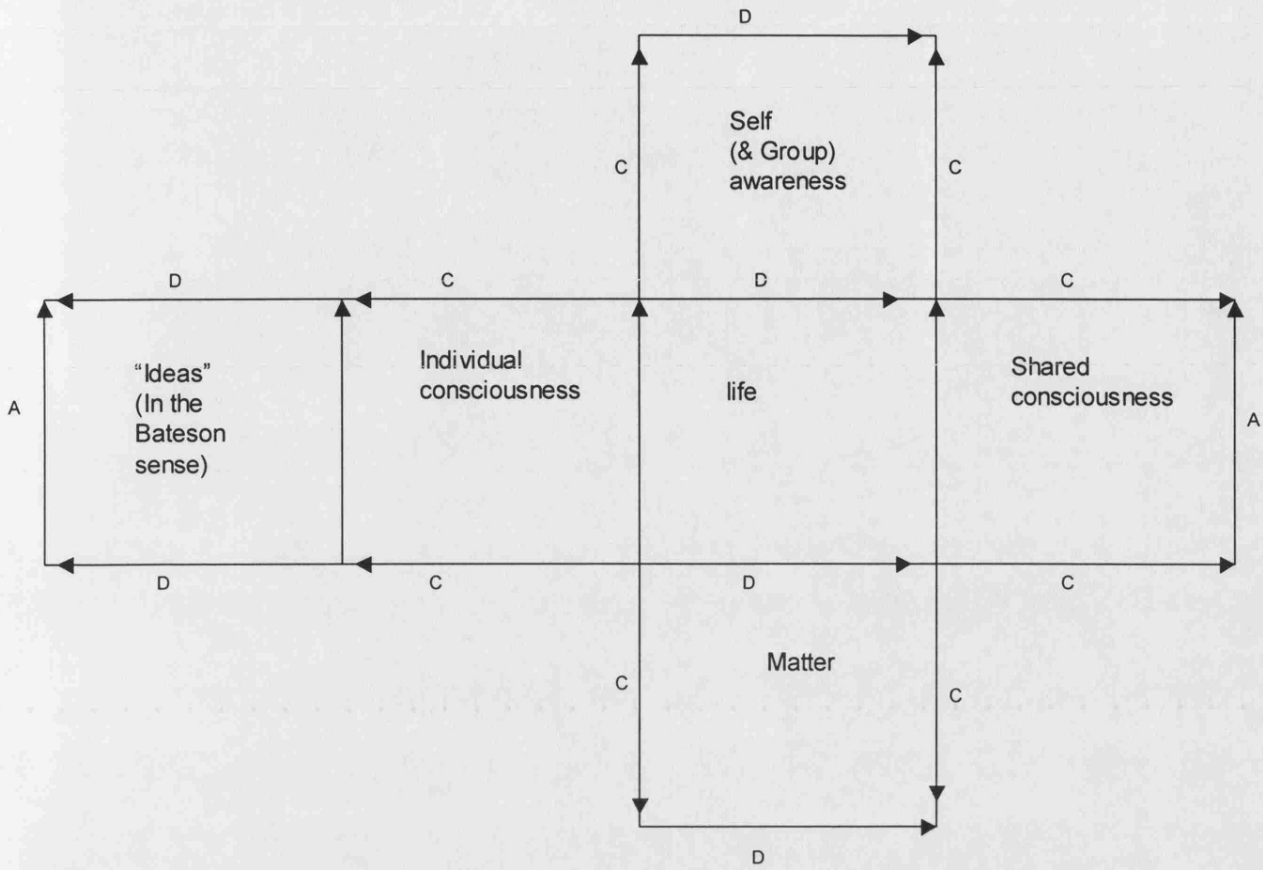
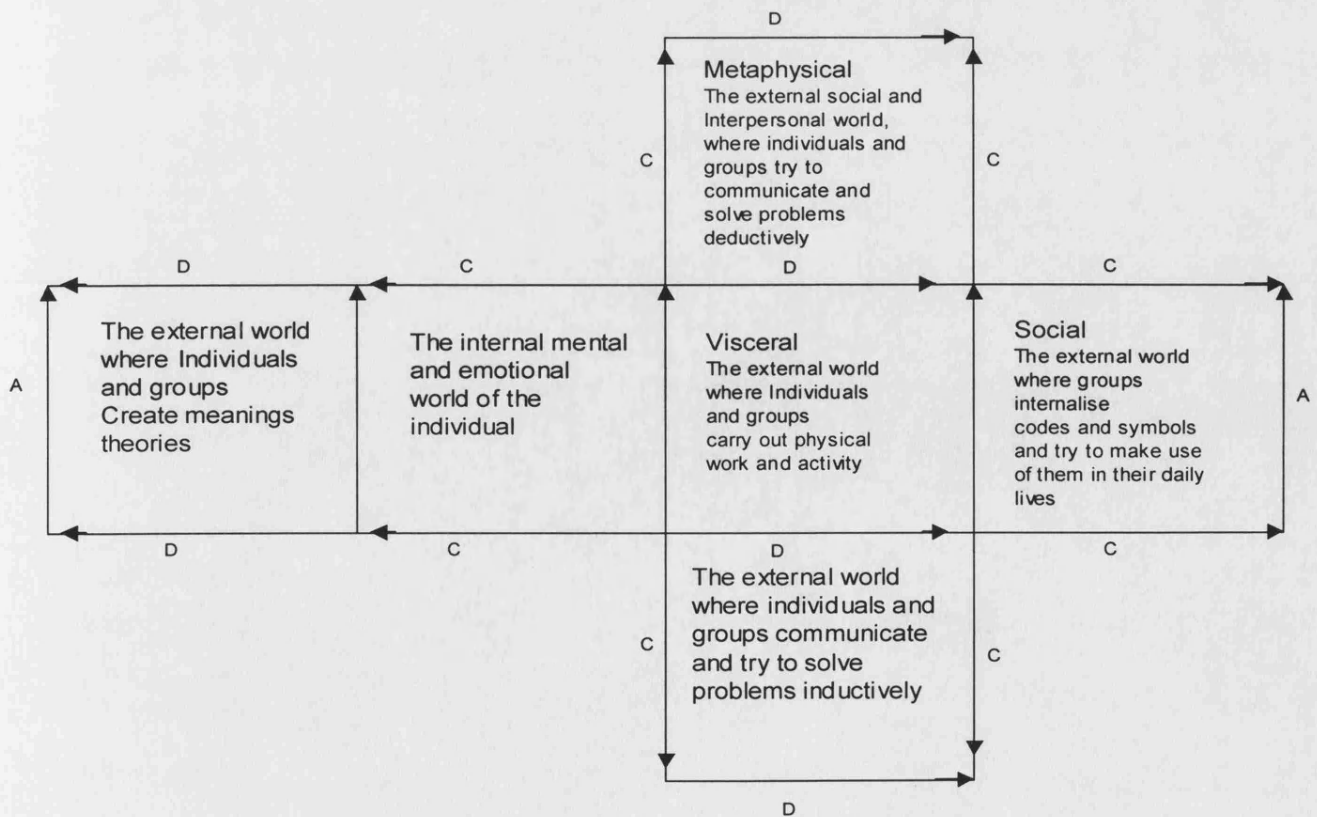


Fig (35) The Social Worlds of Boisot's Box



As these diagrams demonstrate, I was experimenting with Boisot's dimensions of codification, diffusion and abstraction to pursue tentative inquiries of a more philosophical nature. I was exploring issues of knowing and being, experimenting with ideas from Habermas, Aquinas and Schumacher.

However, I remembered Bateson's answer to the question "What is an explanation?" which we considered earlier. Explanation is simply the mapping of a description onto a tautology. The process of mapping descriptions onto tautologies makes humans feel good, but it doesn't make the explanations true. I realised that being able to draw diagrams reconciling these various theories or philosophies with Boisot's Framework didn't make any of them "true".

The most interesting part of the Boisot box for me was the bottom half, the relatively uncoded dimension: The realm of the ineffable. This tacit domain is rarely mentioned in science or business theory. But the scientists themselves know it well. Poincare, for example:

"[T]he subliminal self is in no way inferior to the conscious self; it is not purely automatic; it is capable of discernment; it has tact, delicacy; it knows how to choose, to divine. What do I say? It knows better how to divine than the conscious self, since it succeeds where that has failed. In a word, is not the subliminal self superior to the conscious self?" Poincare (in Ghiselin (1952))

Pascal (1670) said:

"The heart has its reasons which the reason does not at all perceive"

Claxton (in Henry (2000) p38) considers the tacit from a business perspective:

"Intuition is actually the glue that holds intelligent action and conscious understanding together."

Research suggests that for even straightforward decision-making, business people rely heavily on tacit elements that they cannot articulate verbally (Henry (2000)).

Polanyi (1956) demonstrates that the rational, explicit, reductionist image of scientific research is a façade. Scientists are driven, in their research interests, findings and conclusions, by assertions which they hold true as "acts of faith". Furthermore, Polanyi (1962) asserts that *all* knowledge is ultimately tacit and social. In Polanyi's explanation of the process of knowing, our focal awareness always operates through a context of tacit, subsidiary awareness. This context becomes embodied through "indwelling". Successive indwelling allows the focal awareness to reach higher levels of sophistication. Hence tacit knowing is primary.

Barfield ((1979)) makes a related point:

"You will sometimes hear people say that they have no metaphysics. Well, they are lying. Their metaphysics are implicit in what they take for granted about the world. Only they call it "common sense""

This tacit dimension is also the domain of much of what we commonly term culture:

"Culture is neither natural nor artificial. It stems from neither genetics nor rational thought, for it is made up of rules of conduct which were not invented and whose function is not generally understood by the people who obey them. Some of the rules are residues of traditions acquired in different types of social structure through which ...each human group has passed. Other rules have been consciously accepted or modified for the sake of specific goals. Yet there is no doubt that, between the instincts inherited from our genotype and the rules inspired by reason, the mass of unconscious rules remains more important and more effective; because reason itself.. is a product rather than a cause of cultural evolution." Claude Levi-Strauss (in Mangham and Just (2000))

"One of the meanings of that overworked word [culture] is the local epistemology, the aggregate of presuppositions that underlie all communication and interaction between persons" Bateson (1987)

There is therefore another way of thinking about the differences between the top and bottom halves of Boisot's box. The top half represents the world of parts and distinctions, whilst the bottom half represents the world of integration, patterns and wholes – the difference between “text” and “context”. As we saw in Chapter Two, similar distinctions have been identified in the way the human brain operates (Gill (2000), Ornstein (1997), Calvin (1997)).

Not only is the tacit important to our everyday coping of business life, but also as the source of much creativity and business innovation. Hall makes this point specifically:

“Sustainable, distinctive capability comes from undiffused, tacit knowledge” Hall in Cox and Hines (1997) p188

Whilst tacit knowing is – of necessity – shrouded in mystery, it is also fragile and easily destroyed. We have to codify in order to make sense of the world but as we do so, we make allocations to categories and define and accentuate differences between categories. This can lead to right/wrong thinking (what Debono calls conflictual thinking), and in turn to the emergence of in-groups and out-groups and from there to conflict. Brown (2000) Debono (1985) and Nonaka et al (1994, 1998, 2000) make the error of emphasising the conversion of tacit knowledge into explicit knowledge. In doing so they misunderstand the tacit. In consciously codifying the tacit, something is always lost. As Wittgenstein (1922) said: “Of that which we cannot speak, we must remain silent”.

Whilst Boisot's model had been meaningful to me, the more I considered it, the more it made me uncomfortable. An example of my discomfort is Boisot's view of information and communication: He draws heavily on Shannon (1948), a respected text and part of the establishment discourse. In Boisot's theory, information is a “thing” which is moving in the “box”. Boisot tries to say what kind of a thing is moving in the box:

“... data is a discrimination between states or micro-states that is built out of low-level energy acting informationally – it acts only on observers, and this only when they behave as such...”

Despite my initial fondness for Boisot's ideas, I found this explanation lamentable. It seemed a classic case of trying to explain *Creatura* from the frame of *Pleroma*: Using the language of forces, energy and impacts to try to explain the world of patterns, differences and distinctions. I found a more persuasive approach to understanding communication in Bateson (1973, 1979), who defines information as “A difference that makes a difference.” He gives an excellent example of the letter you did not write to a relative. No forces, energy or impacts exist: Information really is in the eye of the beholder. And a socialised eye, at that.

In *Creatura*, information and perception are inextricably linked:

“Perception... may be regarded primarily as the modification of our anticipation. It is always an active process, conditioned by our expectations and adapted to situations. Instead of talking of seeing and knowing, we might do a little better to talk of ... noticing. We notice only when we look for something, and we look when our attention is aroused by ... a difference between our expectation and the incoming message. We cannot take in all we see in a room, but we notice if something has changed.” Gombrich (1960)⁵

Maturana and Varela (1998) advance an effective critique of Shannon's communication theory:

“[A]ccording to this metaphor of the tube, communication is something generated at a certain point. It is carried by a conduit (or tube) and is delivered to the receiver at the other end. Hence, there is a *something* that is communicated, and what is communicated is an integral part of that which travels in the tube. Thus, we usually speak of the “information” contained in a picture, an object or, more evidently, the printed word.”

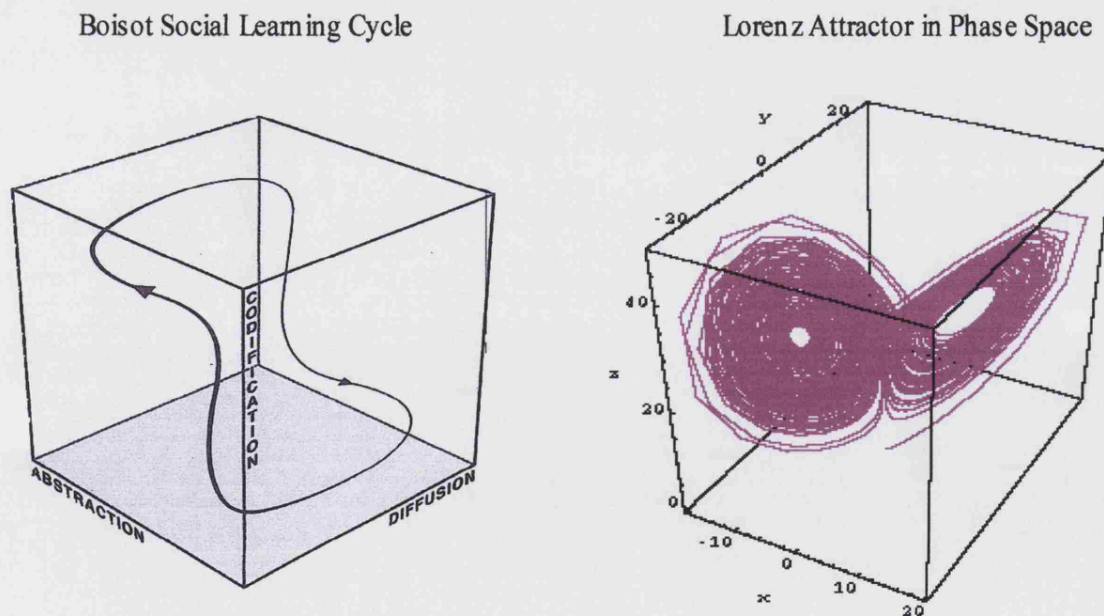
The right hand side of the model is about “adventuring within” the world. Attempting the social process called communication (or “mind reading”). Learning by doing. Creating artefacts. On the left side of the model is the individual perspective. This half is about noticing the “differences that make a difference”. But what is moving in the box, if it is not “data” or “information”? I started to think of the movements in the box as *trajectories*: exploratory actions in a search for meaning, drawing on Polanyi’s idea of a “universal intent”: a search for truth. In this view, there is an active dialectical dance, and as we adventure within this search, we sometimes experience *knowing* as a phenomenon. Not the trivial knowing of some fact, but the deeper knowing of something which helps us in our existential coping. This relates back to my much-loved quote from Carrithers about the human ability to “track a complex flow of social interaction”, something that is mysterious yet self-evident.

A cycle akin to Boisot’s SLC could therefore be re-interpreted as such a flow, a flow of *sensemaking*. For me, this helped to make the model more fully-human; a description of how humans become “time-binding” (Korzybski (1950)). It might also potentially describe how memes evolve in a fitness landscape of ideas.^{6 7}

Another reverie led me to compare Boisot’s box with *Phase Space*: Boisot’s model looked similar to a chaotic attractor in phase space, but was this sheer coincidence? Further consideration suggested that the similarity, whilst metaphorical, was (as the logicians say) non-trivial: Boisot’s box is a model which attempts to describe (non-linear) social interaction. Phase space is also a multidimensional space used model non-linear phenomena. Both models are therefore attempts (by humans) to represent recursive, aperiodic *natural* phenomena.⁸

Fig (37) shows Boisot’s SLC alongside a famous chaotic attractor – The Lorenz Attractor

Fig (37) Social Learning Cycle and Lorenz Attractor Compared



These apparent similarities being suggestive, I pursued the connections between the Social Learning Cycle and Phase Space further. A distinctive feature of non-linear dynamics is self-similarity: The patterns formed by attractors in phase space are repeated at many successive levels of detail. Fractal properties occur in models of natural phenomena including models of

biological population growth (May (1976)), coastlines (Mandelbrot (1982)), ferns, trees and other living structures. Importantly, fractals are increasingly being observed *directly in nature* rather than approximated or inferred from models: instances have been found in the structure of the polio virus, haemoglobin, clouds, rainfall and fluid turbulence (Stewart (1997)).⁹ So the world of the Lorenz Attractor, a world of recursion, and of patterns repeating at infinite levels of detail or abstraction, has a close analogue in other natural phenomena. What about the world of society and of communication: the world of Boisot's SLC?

I should pause here to clarify my argument further. At first sight it may appear fanciful to place Boisot's Social Learning Cycle in Information Space and Lorenz' Strange Attractor in Phase Space side by side and claim that the similarity is significant. But it is worth noting that in later work Boisot has himself made a similar comparison (Boisot and Child (1999), Boisot and Cohen (2000)).

We should remember that the Lorenz Attractor is nothing more than a very imperfect attempt to model a complex non-linear, partially biological, partially deterministic process. The model is expressed as a phase space in three dimensions because most humans have difficulty in thinking in more than three dimensions. Similarly with the imperfect "phase space" of the Social Learning Cycle. Boisot and Cohen express this view clearly:

"In both the biological and managerial disciplines, one sees two significant shifts: from objects to interaction between objects, and from objects as things to objects as spatio-temporal states in wider processes... In both disciplines, one is now moving toward the study of interacting processes; in other words, toward the study of complex, possibly adaptive, systems."
Boisot and Cohen (2000))

Hence my argument is simply that the two models in Fig (37) represent attempts to model nonlinear natural phenomena in a three dimensional space. I am not claiming that the particular shape of the Lorenz attractor (a "strange attractor") is "the same as" the pattern of attractors in the Social Learning Cycle, any more than either of them is a "true" or exact reflection of the natural phenomena that they are intended to emulate. What I *am* saying is that the fact that these two models end up looking similar probably tells us something significant about how humans try to make sense of complex nonlinear processes: We tend to picture them as recursive, fractal patterns in a space of possibilities.

As we saw earlier, Gregory Bateson grappled with this question of pattern in the living world. He came very close to describing non-linear dynamics without knowing it existed:

"Mental process requires circular (or more complex) chains of determination" (1979 p103)
"In mental process, the effects of difference are to be regarded as transforms (i.e. coded versions) of the difference which preceded them." (p109)
"The description and classification of these processes of transformation discloses a hierarchy of logical types inherent in the phenomena" (p109)

Where Bateson's uses the term "mental process" he is not talking about something that necessarily goes on in an individual human brain. He is talking about the world of ideas. Not in the Cartesian sense but rather one of visceral, monistic verities. If we consider Boisot's box as an epistemological or ontological space, we can explore these ideas of spirals and levels further. There are many examples of levels and spirals in "ontological space".¹⁰ Some examples follow.

In his Anthropological work, Bateson (1936) applied a dialectical ladder to help interpret social actions. His spiral leads from process (i.e action or observation) to form or pattern, back to process, onward and upward – each step forming the context for the next.

Polanyi's philosophy introduces the concepts of subsidiary and focal awareness as essential to making meaning. The subsidiary is tacit. We attend to the focal from and through the subsidiary. We can develop the extent and nature of our subsidiary awareness through an embodied process of "indwelling". What we have, therefore, is a recursive process of knowing, most of which we are unaware of, in a spiral which Polanyi captures as $S-F^{S-F}$ (Polanyi (1975)).¹¹

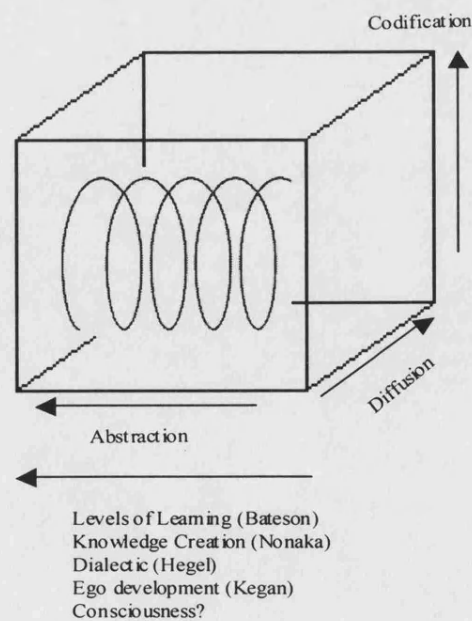
Hegelian dialectic is another example of levels and spirals in idea space. We have thesis, antithesis and synthesis, leading to a new thesis and the cycle starts again¹². We might debate the content of the dialectic, whether or not the thesis is "true", but as a human social process of searching for meaning, we can experience it happening around us in conversations all the time. This phenomenon – the dialectic spiral – is non-linear, aperiodic, and recursive (we may sometimes come back to similar views, but normally not –in a healthy conversation - identical views).

In psychology, Loevinger (1985) and Kohlberg (1973) developed hierarchical theories of ego development, which Kegan (1994) and Fisher, Rooke and Torbert (2001) have developed further, in Kegan's case, into a theory of levels of consciousness. At one level, Kegan suggests, we discover reality by becoming aware of it, whilst at another level of consciousness, we create reality, moment by moment in relationships and interactions. The more "developed" level he calls dialectical.¹³ Torbert applies ego development to management development, with the more "developed" frames being increasingly paradoxical and metaphorical.¹⁴ Nonaka and Takeuchi (1995) refer specifically to knowledge creation as a spiral between paradoxes, within an existential space.

There is a common theme in all these examples of spirals in idea space. As we move toward greater abstraction there is an increased level of context or perspective; a move from the synchronic toward the diachronic (Saussure (1989)).

Fig (38) summarises some of the ideas explored above. I should stress again here that these are exploratory gropings, not assertions of positivist "facts".

Fig (38): Some musings about fractals and attractors in "idea space"



I next turned my attention to the three *dimensions* which Boisot identified in his model: Codification, Abstraction and Diffusion. These words appeared clumsy cybernetic terms; inappropriate for the world of *Creatura*.

Codification sounds like something a computer would do. But what do humans do? To me it seemed that the process was something to do with signifying; or symbolising. The most fitting constructivist term I could find was *languaging*:

“We humans exist in the network of structural couplings that we continually weave through the permanent linguistic trophallaxis of our behaviour. Language was never invented by anyone only to take in an outside world. Therefore, it cannot be used as a tool to reveal that world. Rather, it is by *languaging* that the act of knowing, in the behavioural coordination which is language, brings forth a world. We work out our lives in mutual linguistic coupling, not because language permits us to reveal ourselves but because we are constituted in language in a continuous becoming that we bring forth with others. We find ourselves in this co-ontogenic coupling, not as a preexisting reference nor in reference to an origin, but as an ontogenic transformation in the becoming of the linguistic world that we build with other human beings. “

“..the uniqueness of being human lies exclusively in a social structural coupling that occurs through *languaging*, generating a) the regularities proper to the human social dynamics, for example individual identity and self-consciousness, and b) the recursive social human dynamics that entails a reflection enabling us to see that as human beings we have only the world which we create with others.” Maturana and Varela (1998) p234 and 246

From this perspective, language is not a set of internal representations of the “outside world” but rather a biological, social process of interaction through which humans “bring forth” a world together.

By replacing the codification scale with *languaging*, the dimension now represented a continuous dialectical dance and an embodied social process, linked to consciousness, recognising that consciousness is itself constructed socially.

Moving to the *Abstraction* dimension, Boisot’s (positivist) dimension was a scale from “concrete” to “abstract”. Now I wanted to think more deeply about what abstraction meant from a fully-human perspective. All our abstractions rely on our embodied knowing (Goodwin

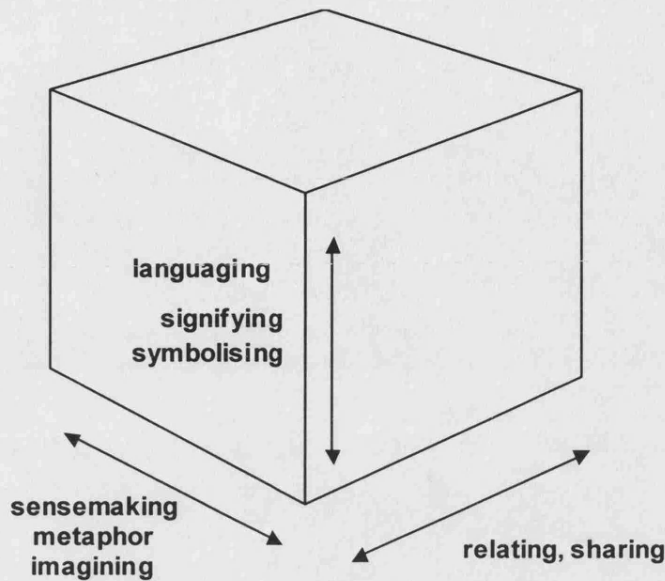
(2000), Lakoff (1980,1999), Damasio (1994)). We can only think what our embodied minds enable us to think. We are incapable of thinking in the absolute abstract, in the complete absence of the physical. “There can be no *Creatura* without *Pleroma*”: Bateson (1979).¹⁵ A more constructivist label for the abstraction dimension was needed. This was clearly the dimension of metaphor – establishing, or noticing, patterns and relationships; similarities; self-similarities. I experimented with a range of terms which seemed more fitting: *sensemaking*; interpreting; imagining.

Finally, I turned to the *Diffusion* dimension. Since in *Creatura* it is inappropriate to think of data, or information, as a “thingish thing” moving down a pipe, what was this dimension really about from a social perspective? I recalled Elias’s view (from Chapter Two) that the individual and the group are aspects of the same phenomenon: relationship. I therefore replaced diffusion with relationship, *relating* and sharing.

Summarising, we can now reconsider the I-Space as a different kind of ontological space; A space of social construction, a space of *possible worlds*. About meaning and sensemaking; about the processes of knowing and becoming; about the roots of creativity in the tacit domain. Within this ontological space, we bring forth worlds through differences and distinctions, which we draw through a process of active noticing. This process of sensemaking is a dynamical, recursive spiral between the social and the personal, the tacit and the (apparently) explicit, and from it emerges a sense of relationship and context.

The revised dimensions are illustrated in Fig (39) below:

Fig (39) Revisiting the I-space as a Dialectical Space



2003 – from Meta-Model to Meta-Meta-Model

Daughter: But how many levels are there?

Father: No, that I cannot know. I cannot know whether there is ultimately a tautology, nor how many levels it has. I am inside it and therefore cannot know its outer limits – if it has any.

Daughter: I think it's gloomy. What's the point of it all?

Father: No, no. If you were in love, you would not ask that question.

Daughter: You mean that love is the point?

Father: But again, no. I was saying no to your question, not answering it. It's a question for an occidental industrialist and an engineer. This whole book is about the wrongness of that question.

Daughter: You never said that in the book

Father: There are a million things I never said. But I'll answer your question. It has a million – an infinite number – of "points", as you call them.

Daughter: But that's like having no point – Daddy, is it a sphere?

Father: Ah, all right. That will do for a metaphor. A multidimensional sphere perhaps.

Daughter: Hmm – a self-healing tautology, which is a sphere, a multidimensional sphere.

Bateson (1973, p206)

So far, we have been thinking about meaning-making in three dimensions. But we should now consider more carefully how many dimensions there might really be in our socially constructed meaning. The most obvious dimension missing from the "box" we have been experimenting with is time. Logic copes poorly with recursive patterns because it lacks the dimension of time. So does our box. Putting time into the model would require four dimensions. But that's the least of our worries.

When using the three simple dimensions of codification, abstraction and diffusion from Boisot's model, it seemed to make sense that they existed at right angles to each other in a three-dimensional space. Since then, I have given these dimensions new names, describing somewhat

more carefully the sensemaking processes that take place in an embodied biological world, rather than a lifeless Euclidian one. Let's look at these new dimensions again. Is there anything about "linguaging" that should put it, logically, at right angles to "relating"? Probably not: linguaging would seem to be partly about relating and relating would seem to be partly about linguaging. Is there any logical reason why relating should be at ninety degrees to sensemaking? Not really. Linguaging and sensemaking? No. So with no more than the gentlest semantic sleight of hand we can see that these dimensions turn in on themselves. Differences and distinctions in the living-world are paradoxical, recursive, fractal. The box becomes non-linear. This should not be surprising, since there are no straight lines or boxes in the world of *Creatura*:

"This behavioural world has many dimensions, including of course the space-time dimensions of our common-sense world, plus a limitless number of other dimensions that defy any form of graphic or imaginative representation" Bois (1968)

Just to emphasise that our philosophical feet are still firmly on the ground at this point, it is worth reconciling these observations with contemporary science and mathematics. In the last section, we compared Phase Space with Idea Space. I have now suggested that to think of Idea Space as a three-dimensional box is an inadequate metaphor, and that it might be better considered a sphere, or other multidimensional space. In science and mathematics, the same is true of Phase Space; models of two or three dimensions are sometimes used, but we know that these models are mere approximations.¹⁶

Summary

This Chapter outlined how the original conceptual model for the research was challenged, rejected, revised and developed during the course of four years of fieldwork and later reflection. The further developed version of the model pictures it as a three-dimensional phase space, whilst at the same time recognising that this is a simplification forced on us by the limits of the human imagination. This tentative and exploratory model sees social sensemaking as a nonlinear phenomenon and a dialectical space. It is a world of recursive patterns, full of ambiguity and paradox: We're not even sure how many dimensions it has. Our most important knowing in this world is tacit, embedded and social. Does it have any fundamentals? Any "eternal verities"? Perhaps not, although one candidate might be pattern, which in *Creatural* terms we call *relationship*. It is an unpredictable, mysterious place, full of all our human passions. I propose a new name for this magical, multi-dimensional place. From this point I shall call it *The Matrix*; a place of emergence, of becoming.¹⁷

"Let us roll all our strength and all our sweetness up into one ball,
And tear our pleasures with rough strife
Through the iron gates of life:
Thus, though we cannot make our sun stand still,
Yet we will make him run"
Andrew Marvell (1650)

Endnotes

¹ e.g. Handy, Hofstede (1980), Kennedy (1985), Bate (1994), Hampden-Turner (1994), Boisot (1995)

² These ideas were influenced by other writers on roles (Belbin (1981, 1993), Goffman (1959), and by my own experiences.

³ The theory was influenced by structuration (Giddens (1979)) and by the anthropologist Mary Douglas (Douglas (1978)).

⁴ The two dimensional version of the model was explained in Chapter 5. The essential improvement which Boisot introduced was the recognition that in order to make sense of “data” humans need to abstract as well as codify. Codification *names* ideas, but abstraction connects them. As shown in the diagram, Boisot also identifies a range of processes related to the movement of information within the I-Space (codification, abstraction, diffusion, absorption, impacting and scanning). I have not explored these in detail in the text for reasons of space. Readers who are interested can refer to the original text in Boisot (1995).

⁵ As we saw in Chapter Two, the process of perception is a mystery to us. Only in the most exceptional circumstances (optical illusions, for example) do we realise, fleetingly, that our percepts may be misleading. Yet we quickly put these experiences behind us and continue to trust our perceptions as if they were “reality”.

⁶ Care should be exercised when talking of memes. They are fragile things, and should not be confused with their artefacts. The memes can die whilst the artefacts remain. Memes are ultimately simply beliefs *and nothing more*

⁷ Another line of enquiry led me to consider whether any of these dimensions (codification, diffusion, abstraction) could be “Eternal Verities” in St. Augustine’s sense.

⁸ Some comments are appropriate. The Lorenz attractor is an entirely deterministic model. A mathematical formula is iterated many times and displays the complex features shown in the diagram. The behaviour that the attractor was created to model – a weather system – may, or may not, be deterministic. The Social Learning Cycle is meant to model a human phenomenon. Whilst some philosophers think human life is entirely deterministic, many do not! Non-linear attractors have been identified across a wide range of human social phenomena, including the development of cities, economic behaviour in commodity exchanges, and traffic flows. We can therefore accept a compromise position of human and social phenomena being “partially deterministic”; what Baumol (1989) terms “noisy chaos”. And since partially deterministic processes also display attractors – a little determinism goes a long way.

⁹ D’Arcy Wentworth Thomson anticipated this almost a century earlier (Thompson(1942) – written much earlier)

¹⁰ This idea was introduced briefly in Chapter 4, but is explained in more detail here.

¹¹ This is similar to Scarle’s concept of “the background” (Scarle (1983)) and Wittgenstein (1979) On Certainty, and Shoter (2003))

¹² Stacey (2003) points out that this particular expression of Dialectic (Thesis-Synthesis-Antithesis) was not used by Hegel, although it is often attributed to him (e.g. Nussbaum in Magee (1987)). It is more appropriately attributed to Kant.

¹³ I’m a little uncomfortable about Kegan’s theory. Simply in the sense that I’m not sure that we know – as a species – very much about consciousness at all. This makes a typology of consciousness a challenging, and risky, endeavour.

¹⁴ Eliot Jacques (1989) has also written about developmental stages from a similar perspective

¹⁵ As an example of the embodiedness of our thinking, one can try a thought experiment. Attempt to define the concept of “left” without reference to the body (see Bateson (1979))

¹⁶ It has become quite mainstream in contemporary mathematics and physics to take the view that “reality” has more than four dimensions.

¹⁷ When I initially coined the term “The Matrix” for this model, I was not aware of Foulkes’ model of the Group Matrix in Group Analysis. Having investigated Foulkes’ model further (Foulkes (1973), Stacey (2000)(2001)). I decided to retain the term. There are some points of similarity between the models, but the coincidence is accidental.

CHAPTER TEN: TEASING MEANING FROM THE FIELD: INTERPETING THE RESEARCH “DATA”

Introduction

“The story I tell in these chapters is necessarily my story, grounded in my intuitions, influenced by my reading of the writers in whom I have delighted and on whose ideas I have drawn, and woven into the texture of my life experience...[A]s you read it, please remember that the map is not the territory and that to fashion a myth is not to state a positivist truth.” Reason (1994a)

My purpose here is to try to throw some light onto my field experiences, and in order to do this from an anthropological frame, I introduce each of these three sections with some earlier anthropological work

The Ritual Supply Chain

“Blinded by their rational model of the political universe, ... intellectuals ignore the ritual that envelopes political action and political power. The ritual is still there (in modern forms), if unreported, in buyer-supplier relations.” Caldwell (2001)

In this section, I consider the experiences as ritual, using a well-known ritual from the anthropology literature, the Kula Ring, to highlight some features.

The Kula Ring was observed by Malinowski (1922). It is part of the lives of the people of the Trobriand Islands to the east of New Guinea. Malinowski’s account focused on their system of gift-exchange:

“The Kula is a form of exchange of extensive, inter-tribal character; it is carried on by communities inhabiting a wide range of islands which form a close-knit circuit. ... Along this route, articles of two kinds, and these two kinds only, are constantly travelling in opposite directions. In the directions of the hands of the clock, move... long necklaces of red shell, called soulava. In the opposite direction moves the other kind – bracelets of white shell, called mwali. Each of these two articles, as it travels in its own direction on the closed circuit, meets on its way articles of the other class and is constantly being exchanged for them. Every movement of the Kula articles, every detail of the transactions is ... regulated by a set of traditional rules and conventions, and some acts of the Kula are accompanied by an elaborate magical ritual and public ceremonies.

On every island and in every village, a number of men take part in the Kula – that is to say, receive the goods, hold them for a short time and then pass them on. Therefore every man who is in the Kula, periodically receives one of several mwali, or soulava, and then has to hand it on to one of his partners, from whom he receives the opposite commodity in exchange. Thus no man ever keeps any of the articles for any length of time in his possession. One transaction does not finish the Kula relationship, the rule being “once in the Kula, always in the Kula”, and a partnership between two men is a permanent and lifelong affair. Any given mwali or soulava may always be found travelling or changing hands, and there is no question of its ever settling down, so that the principle “once in the Kula, always in the Kula”, applies to the valuables themselves...

... there are other activities, preliminary to the Kula, or associated with it, such as building of sea-going canoes for the expeditions, certain big forms of mortuary ceremonies and preparatory taboos. The Kula is thus an extremely complex institution, both in its geographical extent, and in the manifoldness of its component pursuits. It welds together a considerable number of tribes, it embraces a vast complex of activities, inter-connected and playing into one another, so as to form one organic whole.”

Malinowski notes that “normal trade” is considered disparagingly by the islanders, whereas the Kula Ring is carried out with pride and eagerness. The ornaments themselves are revered, each having its own history and pedigree. Particularly fine pieces have the highest prestige, although they have only aesthetic value, and no functional utility. They are not even used for ornament or display.

Anthropologists classify the Kula Ring as a ritual. But what is a ritual?

“Rituals are formal, stylised, repetitive, and stereotyped. People perform them in special (sacred) places and at set times. ...Ritual performers are *in earnest*. Rituals convey information about the participants and their traditions...rituals translate enduring messages, values, and sentiments into action. Rituals are social acts.... just by taking part the participants signal that they accept a common social and moral order, one that transcends their status as individuals.” Kottak (2002)

That takes us part of the way there, but there is more to it:

“Ritual... is sacred, even if participants do not carry it out with the calculated reverence that social anthropologists would like.” Lewis (1992)

“What contains and sustains [ritual] in a society? The answer is, quite simply, myths. As the mode through which society expresses beliefs about things it holds sacred, myths are stories that explain how things came to be the way they are and, importantly, how they should be maintained.” Cole (1988)

It seems that ritual provides us with a way of getting close to the sacred in relative safety. Bateson (1987) argues that the sacred may be sacred for a reason; perhaps some knowledge really is pathological for us. So not only is there something metaphorical about ritual, but there is something tacit: rituals mean more than they explicitly say. As we will see in Chapter 11, a ritual is an *integrative act*, pulling together the dimensions of sharing, sensemaking and signifying; subtly weaving the tacit and the explicit.

Let us look at the Kula as a ritual. It is recursive: forever cycling without repeating or ending. There are a number of fixed rules. It is not performed by “rational economic, maximising” humans, but by humans who gain great pleasure from owning a valuable item for a period and exchanging it. It creates and maintains relationships (the “partners” of the Kula Ring). Malinowski observed that many sacred ideas were tied up in the ritual. The symbolic exchange of gifts, forming life-long relationships, is centre stage, whilst commercial trade goes on in the background and is given less importance. As Durkheim (1912) would say, the commercial activities are “profane” whilst the exchange of gifts is “sacred”.¹

Not only, then, is the Kula a ritual involving the sacred, but it also suggests a form of exchange based on social relationship rather than the one-upmanship of negative reciprocity. Gifts can be given without self-interest, out of kindness, or simply out of a socially constructed knowing that the giving of gifts is “right”.

At this point, we’ve explored a little of what ritual means, and considered an example of one. Can we relate this to the contemporary business world? Cyert and March (1963) think so:

“..... theories of rational... calculated, consequential action underestimate both the pervasiveness and the intelligence of alternative decision logic – the logic of appropriateness, obligation, identity, deity and rules”p230

“A business firm is a temple and a collection of sacred rituals as well as an instrument for producing goods and services. The rituals of choice tie routine events to beliefs about the nature of things. They give meaning”p236

This would be a good point to consider some definitions of “sacred”:

Sacred:

- Not to be violated (Chambers Etymological)
- Entitled to reverence and respect (Merriam Webster)
- Not secular or profane (Merriam Webster)
- Highly valued and important (Merriam Webster)

Such definitions, whilst useful, leave a lot unsaid about what we mean by the term “sacred”.

As Gans (2000) observes, “few thinkers have influenced our conception of the sacred as much as Durkheim. Durkheim (1965/1912) identified the sacred as something separated from the everyday sphere of social life; but on what basis is it set apart? Some theorists suggest it is on the basis of the sacred having a “wholly different essence”: an *ontological* distinction (e.g. Levi-Strauss (1965[1915] p57), and often this is associated with fear and awe: *mysterium tremendum* (Otto (1958[1923] p12). Yet, increasingly, anthropologists recognise that whilst the sacred may be set apart, in some societies it does not have the quality of *tremendum* (e.g. Bell and Werner (2003)).

Indeed, in the postmodern world there are “denumerable entities” which are perceived as sacred, and often these are not overtly religious; the American flag is a good example (Antonnen (2000)). For a contemporary ethnographer, then, the sacred is “not so much a metaphysical enigma as an issue of epistemology... [The ethnographer looks for] actions and intentions of people as they create boundaries and establish conventions of behaviour toward these boundaries” (Antonnen (2000)).

Rappaport, a more recently influential figure in theories of the sacred “treats the sacred as a category the contents of which are ritually constituted... to maintain the adaptive flexibility of human social systems” (Rappaport in Antonnen (2000)). And as Mary Douglas (1978) notes “the reasons for any particular way of defining the sacred are embedded in the social consensus which it protects.”

In contemporary culture this can generate conflict between what is considered in principle socially legitimate and the “rules” which govern our social decision-making. Rock (2003), for instance, demonstrates that whilst human life may be considered sacred in principle, it is always “subject to the exploitation of the economics interests” of insurers and pharmaceutical companies.

The issue of what is or is not categorised as sacred is therefore a slippery one, as is the whole issue of defining the sacred. Nevertheless, there is a common theme about the sacred being related to set of meta-rules: Rules that must not be broken or the consequences will be disastrous. Clearly these rules are social rules, but they are also rules about rules: rules of a “higher logical type”. Why is the breaking of these meta-rules so dangerous? Because it challenges our *beliefs*. And as Cyert and March point above, we are as much ruled by our beliefs in twenty-first Century Britain, as were Malinowski’s Argonauts a century ago.

For the purpose of this current chapter, and to introduce as much clarity as possible to a difficult notion, I should define the particular way in which *I* am using the word “sacred”. Here, I use the term sacred with no assumption of “*tremendum*”; nor do I assume that the sacred is of necessity “right” or “good” (even Durkheim recognised this ambiguity of the sacred). Rather, I refer to the sacred as a category “set apart”, ritually constituted to maintain the adaptive flexibility of a given social “system”. The sacred, here, is embedded in the social consensus *which it protects*.

What do our present day business rituals look like and what might they tell us about what we hold sacred? We shall consider the field narratives to find out. But before we do, I want to introduce an “anthropological tool”, in the shape of a typology, which builds on work by Stacey (2003):

“It is not possible [in organisations] to talk freely and openly to just anyone.... about anything one likes.... Relationships impose powerful constraints on what it is permissible to say, to whom and how....

It is sometimes quite acceptable to act but quite unacceptable to discuss freely and openly the reasons for doing so. Alternative reasons that cover up the “real” reason, are disclosed instead.

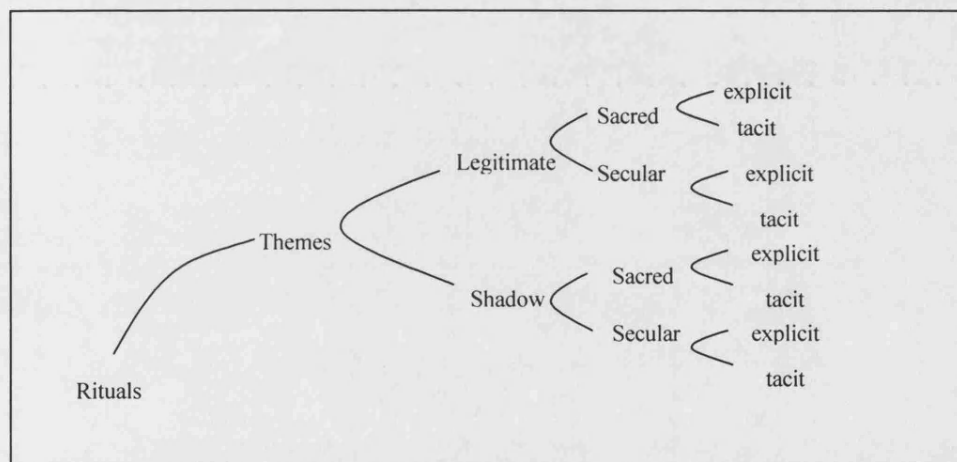
This is the distinction I make between *legitimate and shadow themes* that organise relationships in organisations.

Legitimate themes organise what people are able to talk about openly and freely.... *Shadow themes* organise conversations in which people feel able to give less acceptable accounts of themselves and their actions, as well of others and their actions. Shadow themes organise what people do not feel able to discuss openly and freely. The distinction between legitimate and shadow themes is closely related to ideology.”² Stacey (2003) p364

Stacey therefore relates legitimate and shadow themes to ideology, which in turn is related to what is held “sacred”.

Building on this useful insight, I now propose an interpretive framework, which brings together the linked ideas of rituals, legitimate and shadow themes, the sacred and secular, and the explicit and tacit.³ This is shown in Fig (40)

Fig (40): The Ritual Supply Chain: An Interpretive Taxonomy⁴



Using this framework, we can identify a ritual, using the definitions given earlier, and ask some questions about what is going on:

- Does what is happening involve legitimate themes, which can be openly referred to in context, and/or are there shadow themes?
- Are these themes sacred and/or secular, again applying the definitions we have found?
- Is what is happening largely explicit or largely tacit?

A note of caution: this is not a reductionist framework. We are not trying to take an extract from the flow of experience and simply break it into bits and name the bits. As I said earlier, a ritual is an integrative act, and we can expect to see it weaving together the tacit and the explicit in a paradoxical, non-linear dialectic. In other words, a ritual typically consists of a lot of these elements all happening at once.

Let us try out this framework on our example from Anthropological lore – the Kula Ring.

The Kula Ring has some legitimate, sacred themes, including the sacred role of the Kula ornaments and the rites performed. There is also a legitimate secular element, consisting of trade, which takes a lower profile but is openly acknowledged. Are there any shadow themes? Not surprisingly, it is hard to say. However, field accounts suggest that there are some only-too-human bitching and rivalries going on behind the scenes in the Kula ring.

Armed with this framework of Legitimate and Shadow Themes, and with some insights into ritual and the sacred, we now return to the Tales From the Field, remembering that *any* interpretation is a subjective one, and not a positivist “truth”.

Ministry of Defence: Ritual Supply Chain Interpretations

In the Field Tales of the Ministry of Defence, we can observe rituals, and examples of legitimate and shadow themes. However, it is important not to anthropomorphise: The MOD is a construct. We can only attempt our interpretations within a particular context, with particular people at a specific time. And then only tentatively.

In *Thanks Anyway*, we see our first example of an MOD ritual. It is formal, stylised and in earnest. The uniforms, artefacts, buildings and language reinforce treasured myths about the British military and its proud centuries of tradition. Our tale from the field is a single moment in a longer ritual. Seated amidst the formality, the pre-prepared questions in strict sequence, the fixed seating plan, it becomes clear that at some point in the last few centuries of the thousands of years of history represented by these uniforms, a Cartesian objectivity stamped its mark on the proceedings. The legitimate theme is clear – we have a panel of leaders in battle dress who are expected to produce a rational, objective, supplier selection decision. Objectivity is sacred. The ritual of objectivity and open competition is legitimate, and explicit.

Then, into the scene comes Bernard Brown. His entrance is incongruous and within moments he breaks the rules of the ritual. At one level, he breaks the rules of the etiquette of the situation. At another level, he undermines the whole premiss of an objective and rational supplier selection. He simply tells us that we are not McBain, and because of this we cannot do the job. Clearly there is a shadow theme behind this somewhere. We cannot know the shadow theme, or it would not be a shadow theme. However, we could guess. One potential interpretation would involve the “British Establishment”. Whilst McBain is an American firm, it is firmly entrenched in the British establishment, through “friends in high places”. This interpretation puts Bernard in a position of openly and knowingly challenging the Ministry, ostensibly on behalf of the Government. Another interpretation is that Bernard’s dramatic interjection was with the prior knowledge and agreement of the military, as a “set up” to test the mettle of the consultants under pressure. As a participant, all I can say is that if it was a performance, it was a most convincing one.

Next, Fran also breaks the rules. Crossing the room on such a formal occasion and sitting with the interlocutor is certainly breaking the rules of the ritual. It is an act of chutzpah. It’s difficult to define this event using our taxonomy. It is a step which speaks loudly to those involved from the tacit domain. It says (perhaps, since it is tacit) “Look, I’m not afraid of this man. In fact, watch how easy it is to embarrass him.” I cannot know, but I like to think the Forces people were amused by Fran’s handling of Bernard. As they said their goodbyes to us, the “Thanks Anyway” appeared to be an unambiguous if subtle message: “We enjoyed the meeting, but don’t expect to get the job.”

There was eventually a decision. Faced with choosing between KPWC and McBain, and with perhaps the Government camp favouring the former and the Uniforms the latter, the Department did the predictable political thing. It gave the project to both McBain and KPWC, and without very much clear definition of our respective roles.

In *Questions in Parliament*, we have another ritual: a less formal meeting. The agenda remains paramount. Arcane language abounds. My conversation with Commodore Gold became difficult; a clear case of incompatible themes. It seems that I answered Nigel’s question as a rational, practical “expert”, missing the indirect, shadow messages. Since the shadow is the shadow, I cannot be certain, but I believe that I now understand what Nigel meant, rather than what he said. The previous phase of the project had been carried out by McBain, and Nigel was

keen that this phase of the project compared favourably to the last. Government, as always, was keen to find something to measure, and was focusing on industry involvement as one of the measures of success. Nigel expected questions to be asked in Parliament about the percentage of industry involvement in the teams. He knew there was only one right answer to the question. He didn't care about the practicalities, they were for the consultants to sort out.

Whilst the presence of legitimate and shadow themes in this tale is clear, I doubt whether there was a strong sacred perspective to what happened. I did not pick up a sense in which Government is held sacred by people in MOD. Perhaps, to some, the principle of democracy is sacred, but the day- to-day business of working with Government and politics is, I suspect, simply part of the daily grind.

Truth to Tell is a prima facie example of the accidental discovery of a shadow theme. A ritual is about to begin. In the ritual, the principle of partnering between MOD and industry will be assumed as paramount, inviolable, *sacred*. Yet the industry "partners" are not ready to tell the truth to their customer. A secular, shadow theme behind a legitimate, superficially sacred ritual.⁵

In *Master Class*, we have another business ritual, this time of the passing on of "Best Practice"⁶. This, then, is the ritual's legitimate, secular, explicit theme.

During the session, it becomes clear that the internal consultants cannot accept the suggestion that specific, measurable results can be achieved in twelve weeks. Even a one percent improvement is not considered achievable. There were shadow themes in operation here. One theme, commonly emerging in conversations where people felt able to talk off the record, was the perception of MOD people that the suppliers held all the cards. One the one hand, they felt that the only purchasing tool they were allowed to apply was competition. This view was a relic of legislative changes imposed by the Thatcher Government in the 1980's: all projects were to be openly tendered and market competition applied. One the other hand, they felt that the changed structure of the supplier market, with much consolidation in the last decade, meant that in many cases there was only one possible supplier for the equipment. Not only did the MOD procurement people believe that they often had no choice of supplier, but they also believed that if they pushed a UK supplier hard on cost, the supplier would lobby the local MP, claiming jobs would be lost, resulting in questions in parliament and an eventual back down by the MOD. Further, there was a widespread belief that the legal framework of MOD procurement prevented the implementation of real partnering relationships with suppliers. More than once, I heard MOD procurement specialists claim that partnering with suppliers would be "illegal" for the MOD.

The "beliefs" operating in shadow conversations, were often apocryphal or distorted. Stories and myths supporting these beliefs circulated daily in unofficial conversations between thousands of people, being embellished and reinforced until they became "valued and important" and "worthy of respect". To challenge these myths was to challenge the conception which MOD people held of themselves and of their socially constructed environment. It was a challenge to their reality. No wonder they reacted so strongly.

Moving to the next tale from the field, *Hot House Flowers*. We have another ritual. This is the ritual of the weekly "Flash Report" process. There was a legitimate belief that that this form of weekly reporting and monitoring was important. It supported legitimate themes of the chain of command, of planning, organising, monitoring and controlling.

The meetings had been taking place for some time, and there had been a gradual socialising process. The two consultants and the two MOD men had started to form some social bonds. Much unofficial conversation took place over the course of the day. Included in this was a shadow conversation about an IPT leader who has challenged the beliefs of Smart Procurement

and who was to be removed from his post. We formed a consensus in our shadow conversation that this was the right thing, and that it reinforced what we were trying to do. It was an event which we saw as significant and fitting to our beliefs in a precise and meaningful way.⁷

There were more shadow conversations within the account of this weekly ritual, much of them trivial and playful. Our bosses would not officially condone our irreverent banter. But there was a theme in this banter too, albeit a tacit one, a theme of “let’s get on with this task but not take it – or ourselves - too seriously”.

Another Tale, *They Hate Each Other* is an account of a conversation emerging from shadow themes in an informal setting. The theme is an important myth, which reoccurred regularly and shaped behaviour across the MOD: the myth of antipathy between the two key organisations in MOD procurement, the DPA and the DLO. These themes, whilst remaining in the shadow, influenced legitimate themes, such as in the “Master Class”, where they shaped beliefs about the time required to achieve any measurable improvements.

So, in this review of Rituals in the Tales from MOD, we have observed meaning-making as a dialectical dance between legitimate and shadow, tacit and explicit, sacred and secular. We have observed a number of rituals taking place. A question remains. Do we know what MOD people *really* hold sacred? Since we are not members of the group, it is audacious even to guess. Nevertheless, I shall try. Perhaps what MOD people hold sacred, ultimately, is the chain of command and orders issued. In war, obeying orders is a matter of life and death: The ultimate measure of the sacredness of an order. Other elements of the sacred may not be shared by all in this large grouping of people, but monarch and country underlie much of the ritual which takes place.

It is now time to move on to our Tales from a different field: Global Corporation

Global Corporation: Ritual Supply Chain Interpretations

In this section we will consider our Tales about Global Corporation from the perspective of The Ritual Supply Chain, drawing again on some of the ideas and frameworks outlined earlier in this chapter.

In *Board Room, Trafalgar Square* we start with the ritual of the consultant’s sales pitch, but this time we are in a large private sector corporation. Once more, tradition is everywhere: The top floor office overlooking Trafalgar Square, the antique furniture, china cups, and oil paintings. Everything is “fiyo”. Are we in a sacred place? Possibly. There is no doubt that there is a tacit impression of dominance, and that we will be expected to show a degree of deference. This starts with the waiting and is further emphasised when the great man fails to arrive and my two colleagues become almost ritual sacrifices for his sidekick.

The gesture towards an objective, rational, consultant selection process is again less than perfect. This time, I am the one who has the inside track, the access to the old boy network, through Ted to the CEO, Chris.

The shadow theme? Chief Execs and their audit partners tend to need each other. Ted and Chris had a relationship going back decades. If anything was sacred in this tale, then perhaps it was the relationship between Ted and Chris. Sometimes this kind of relationship goes too far and crosses an ethical or legal boundary. At other times, it helps to open the door.⁸

It is worth noting that after this ritual, it was not simply a case of starting the consulting project. The next stage was a further ritual called “Getting buy-in.” I had to meet all the key executives in the relevant Division and persuade them that the project was a good idea. I had to write a contract and go through it with several of the client’s lawyers in fine detail. I had to present

plans for the project and amend them to reflect feedback from key players in the client.... All this took a further six months before the project began.

Next, we turn to the tale: *Joel's golf clubs*. Here, there are some interesting shadow themes. Joe is the point man for the allocation of freebies. He flaunts legitimate behaviour by lining up sets of new golf clubs in his office.

Out of line, pal is another supplier selection ritual. Here the legitimate theme is one of rational, objective supplier selection, but there are other things going on in the shadow. There is my knowledge that Joe has surreptitiously promised Warner that they will keep their existing business. Then there are the strange events during the supplier meetings themselves – Warner making a unwanted presentation, Jack falling asleep.

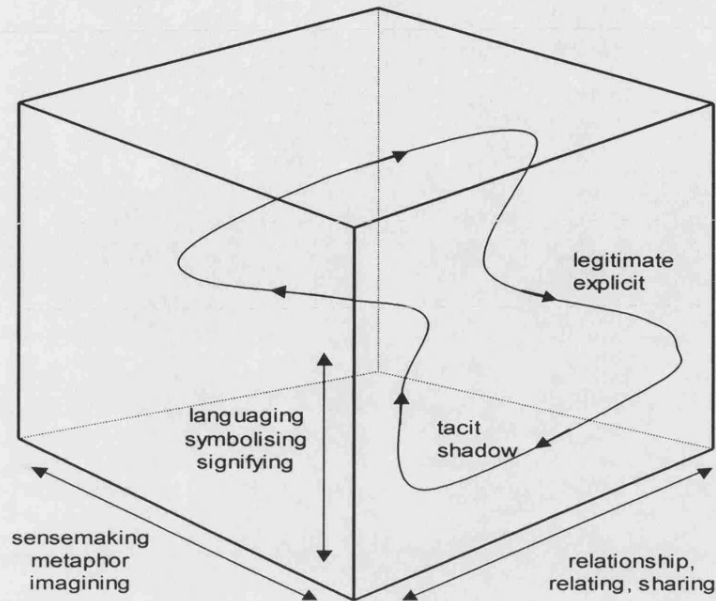
My own agenda was not entirely legitimate either. As a consultant, I wanted to encourage a healthy level of competition between the two short-listed suppliers in order to maximise the savings opportunity. Our fees were linked to savings. Jack also seemed to have an alternate agenda, although I'm not sure what it was. Perhaps he had aligned himself with Joe in order to protect the incumbent supplier. The resulting scene between Jack and me was charged with emotion and aggression. I made a stand and – on the day – I got away with it, but Jack never forgave me.

In *Would ten million dollars be OK?* I spent half the night preparing for what I thought was going to be an intense and challenging negotiation. A lot of money was at stake – our consulting fees. Perhaps here we are touching on what is truly sacred for US and UK business people in the private sector: money. It is not common to expect discussions about more than two million dollars in fees, to be entirely based around an honest appraisal of the situation. People tend to take opposing positions and bargain. Some of the points each puts forward may be fair, but others may be a deliberate distortion of the situation in order to load the eventual agreement in their favour. Rightly or wrongly, that is how business tends to be done. Sahlins (1972) coined a term for it: “negative reciprocity”: In other words, not playing fair. So that was what I was expecting: a ritualised, partly rational and partly sneaky bargaining session. I prepared myself in the traditional way, in our culture, for such a session, with my list of points, the order in which I thought it best to raise them, my anticipated objections to some of the other “side's” claims, some concessions I might offer if pushed, and so on. But it did not happen. Mike immediately opened with a good offer and we shook on it. Why did this happen? I'm not sure. Maybe they thought we'd done a good job and didn't want to haggle. Maybe Ted and Chris had already agreed the fees, and Mike and I were just going through the motions. I don't know. And this is often the case in the real, messy world of business relationships. This is not how it usually gets written up in academic journals. It is not legitimate to talk of your successes as the result of chance or mystery.

The Ritual Supply Chain: reflections on the field experiences

At this stage, we have taken a look at some “Tales from the Field” from an unconventional perspective, the perspective of ritual and the sacred. In doing so, we have applied a (tentative and non-positivist) taxonomy, and a social constructivist frame of reference. We have also contrasted the observations of ritual in our contemporary business context with an example from the anthropological tradition: the Kula Ring of the Trobriand Islanders:

I have suggested that positivist cause-and-effect thinking is of limited use in understanding this phenomenon of human social knowing. Instead, a “way of thinking about” these issues was established in terms of a model. The model conceives the world of human ideas as a social process of sensemaking, sharing and languaging. Within this Matrix, meaning is created through a dynamic, non-linear, recursive process; a process for which we currently have very little scientific understanding. The model is repeated in Fig (41)

Fig (41) The Matrix: Ritual as a Dialectical Dance in Idea Space

Particularly important within this Matrix of meaning-making, is the tacit dimension. With Polanyi, I take the view that tacit knowing is primary, that we always know more than we can say.

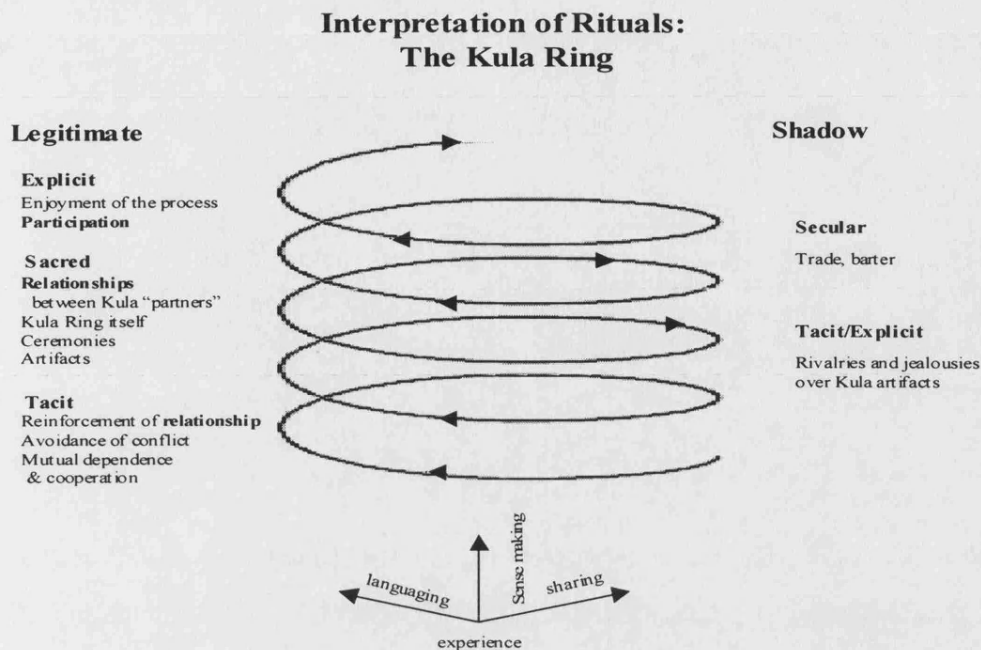
It is now time to consider and summarise the observations I have made from this perspective.

At this point, it is useful to note some contrasts between the supply chain of the Kula, and the two contemporary UK/US supply chains of the Field Tales.

In the Kula Ring, a number of clear *legitimate themes* emerge. The development of relationships is of primary and explicit concern: “Once in the Kula, always in the Kula”. Kula partners are partners for life. The Kula Ring cycle and its associated ceremonies reinforce these relationships. From a functionalist standpoint, this reinforcement of relationships might help to prevent conflict and encourage mutual cooperation. In the *shadow* lies the more trivial and secular business of trade and barter, and the petty jealousies over Kula artefacts.

Retaining our conception of ritual as a dialectical dance between the legitimate and the shadow, tacit and explicit, sacred and secular, and as an integrative social act weaving these strands together, this can be summarised as shown in Fig (42)

Fig (42) Interpretation: Kula Ring

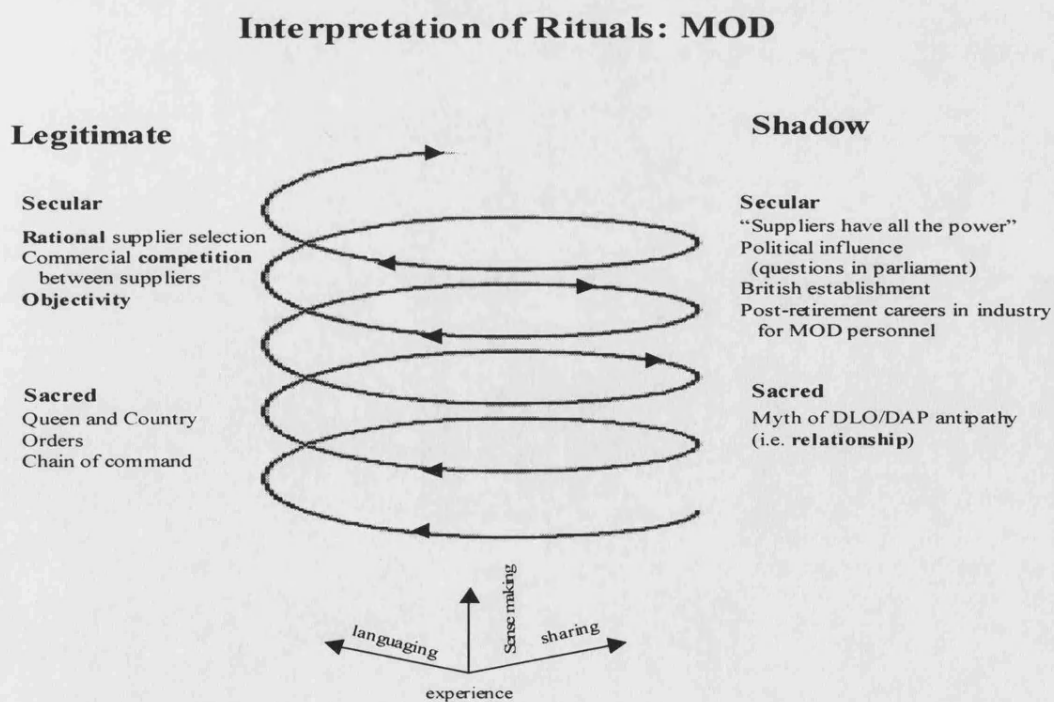


The key aspects of the “Kula Ring as Supply Chain” which are worthy of note at this point are:

- Relationships, and relationship building are seen as legitimate and sacred
- Participation in the process of relationship building is also legitimate and seen as a source of pleasure and enjoyment
- Trade is seen as a necessary but relatively unworthy pursuit

This can be contrasted with the Field Tales from the MOD, as summarised in Fig (43):

Fig (43) Interpretation: MOD



This interesting state of affairs raises some important questions. How did what some societies, such as the Trobriand Islanders, considered mundane – trade and open competition – become sacred, and why? It is difficult for us to acknowledge the legitimacy of this question, since we are, in the UK, socialised into accepting the sacredness of the market, but it is nevertheless an important line of inquiry. Conversely, how did what the Trobriand islanders consider sacred – the development of long-term interpersonal relationships, supported and protected by codes and rituals - lose its legitimacy and become relegated to the shadows?

It seems that widespread reciprocal exchange and mutuality, motivated not by the pursuit of wealth but in the pursuit of human interaction, a key elements of human social behaviour for hundreds of thousands of years, has in the last three centuries become profane, whilst in parallel with this the *application of the forces of the market place has become the widely acknowledged, legitimate and sacred myth.*¹⁰

The Chaotic Supply Chain ¹¹

“Certain mysteries are for formal reasons impenetrable, and here is the vast darkness of the subject”
Bateson (1936) p302

“Do not interpretations belong to God?” Genesis 40:8

In 1936, Gregory Bateson published “Naven”, an account of his field study of the Iatmul people of New Guinea.¹² In it, he acknowledges the recursive nature of human relationship:

“I am inclined to regard the study of the reactions of individuals to the reactions of other individuals as a useful definition of the whole discipline of what is vaguely referred to as Social Psychology.”¹³
Bateson (1936) p175

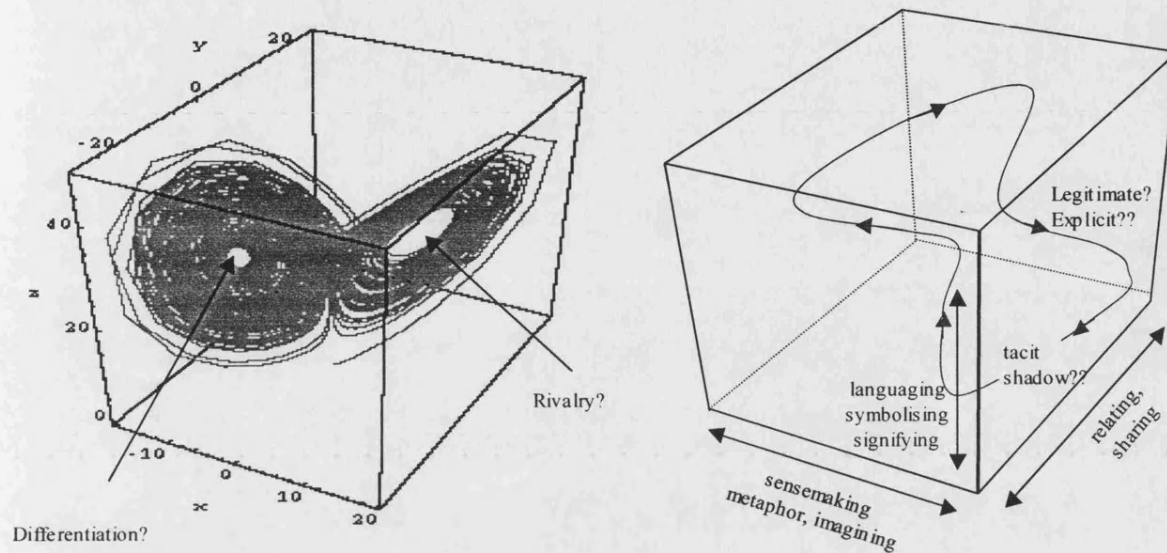
If what we are studying is “the reactions of individuals to the reactions of other individuals”, then there is no clear start or end-point – we have to just jump in and hope for the best.

Bateson introduced the concept of *schismogenesis*, “a process of differentiation in the norms of individual behaviour resulting from cumulative interaction between individuals”.¹⁴ He noted certain recurrent themes in his consideration of the Iatmul:¹⁵ “Sequences of social action such that A’s acts were stimuli for B’s act, which in turn became stimuli for more intense action, and so on.” These sequences could be divided into two classes: symmetrical schismogenesis, “where the actions of A and B were similar” (rivalry, or boasting, for instance) and complementary schismogenesis, “where the mutually promoting actions are essentially dissimilar but mutually appropriate” (dominance and submission, for example). Bateson expected that the result of symmetrical schismogenesis would be increasing rivalry and that the result of complementary schismogenesis would be increased differentiation. But the model created a problem for Bateson: If this was what happened in Iatmul culture, then why did relationships not spiral either into intense rivalry or complete withdrawal? Occasionally they did, but more often than not, things settled down. Since Bateson did not have complexity theory to draw on, he had to make do with cybernetics, and eventually he identified some negative feedback loops which might possibly stop the “system” from spiralling out of control.¹⁶

I think Bateson’s problem was one of particularism. He was identifying specific behaviours as symmetrical or complementary but separating them from the wider picture. Today, more informed by the application of complexity theory to human behaviour, we should see these cycles as more complex – influenced by many variables. As such, they are better thought of as multidimensional recursive patterns, which we now formally call *attractors*. In this way of thinking, rivalry and differentiation could be seen as *attractors in behaviour space*. And from what we are learning about attractors, it is by no means a foregone conclusion that a particular pattern of interactions (or relationship) will be pulled into (say) a rivalry attractor at any particular time. Rather, a pattern of behaviours might be recursively cycle in behaviour-space,

for instance, between an attractor for rivalry and another attractor for differentiation, or indeed, some other attractor. Such attractors therefore demonstrate the paradox of “combining” convergence and divergence. The familiar theoretical model of the chaotic attractor therefore seems apposite. I illustrate this in Fig.(45) below, where the idea of schismogenesis as a strange attractor and the Matrix model introduced in Chapter 9 are compared.

Fig (45) Schismogenesis in Behaviour Space and Matrix Compared



It seems that Bateson did what was a reasonable job at the time, in trying to understand some of the social dynamics which he observed. Today, however, with due respect to Bateson, we should regard schismogenesis as an early grappling in the direction of what we might now call *non-linear social interaction*.

With the benefit of another half-century of science, we have perhaps made a little more progress, which we can summarise in a few sentences. There will be some repetition here of points previously made, but my approach is so far off the beaten track that I feel compelled to recap frequently:

- Human social behaviour can productively be studied as a branch of natural history/ethology.
- This inquiry places it in the category of *creatura*, where pattern and relationship are of particular importance, rather than forces, impacts and efficiency, which are necessary but not sufficient characteristics of the living world.
- An essential characteristic of the living world is non-linearity. As a result of this, neither inductive nor deductive reasoning is adequate to the task of explaining what happens to living organisms, including humans.
- As a result of the inadequacy of inductive and deductive reasoning in the living world, we must “think as nature thinks” using metaphors and tacit/aesthetic qualities as our guides.
- In this non-linear world of the living, paradox is ever-present. Not the paradox of apparent contradictions waiting to be reconciled, but the deeper paradox of contradictory “realities” coexisting.
- In this nonlinear world, we cope with our social thrown-ness through *languaging, sharing and sensemaking*, all of which are conversationally mediated. Much of this mediation is tacit.
- *Emergence* is significant. Things happen and we don’t know why. Nor can we have any hope of developing an *explanation* in the sense in which logical positivism expects it. The sheer social complexity of our lives as humans creates patterns which we have little capacity to predict. At best, we can sometimes notice the patterns and make some informed guesses as to what might happen next. These informed guesses go far beyond anything that the languages of mathematics, science or orthodox management theory can currently offer us.^{17 18}

Stacey's theory of complex responsive processes in organisation life was introduced in Chapter Two. Stacey reaches the conclusion that it is not appropriate to apply the theories of chaos and/or complexity directly to social processes in general or to management in particular (e.g. Stacey (2002)): these theories are developed from entirely deterministic mathematical models, and humans, he asserts, are not entirely deterministic. The theories can therefore only be applied through analogy or metaphor. Further, he reasons that the terminology of complex *systems*, often used by others in relation to management, is inappropriate, preferring to talk of complex *processes*: "Systems thinking" tends to imply a degree of cybernetic control which does not obtain in the real world of organisations.¹⁹ From this position, he goes on to focus particularly on the process of interaction of conversational themes in organisational life, which he takes as the analogue for the interaction of heterogeneous agents in complexity models. In contrast, other writers apply models from Chaos and Complexity more directly; in particular portraying human phenomena from a systems perspective

Stacey's position is carefully argued and I would like to build on it to some degree in this section of the Thesis. My view has many similarities to Stacey's position, but also some differences of emphasis. My theoretical position supports Stacey's use of the term "process" rather than "system". But I have not rigorously applied the term "process" rather than "system" throughout the Thesis. There are two reasons for this. Firstly, this Thesis does not attempt to pursue a strict application of Stacey's theory of complex responsive processes of relating to the research questions. Using Stacey's terminology throughout would have wrongly given the impression that I was attempting a strict application of his theory. I am not. Secondly, I am less uncomfortable than Stacey with the use of the term system. Whilst it is true that the word "system" has cybernetic, cognitivist connotations in our academic culture, these are connotations only: there is nothing to stop us accepting that there can be such a thing as a non-linear, aperiodic, not-entirely-deterministic, living "system". Capra (1996) claims: "Systems thinking is always process thinking".

I support Stacey's view that the links we suppose to exist between certain non-linear mathematical models and human behaviour should be made through metaphor or analogy.²⁰ Where I take issue slightly with Stacey is that I believe this limitation may apply to *all* theorising. Stewart (1995) points out that Newton relied heavily on metaphor in applying his theories of gravitation to the movement of the planets, and Polanyi (1956) exposes the leaps of faith that underlie all scientific theorising. In any case, a metaphorical or analogous link may be at least as valid as an abstractive one, although perhaps of a different logical type. I suggest that metaphorical links are of the family of links that approach the "pattern which connects", which are closer to "how nature thinks", which make more use of our entire thinking capacity including the qualitative, and which are essential for aesthetic thinking and for wisdom. How much more "true" these links between complexity and humanity must be, if we can only discern them through our creatural and fully-human capabilities for metaphor!²¹

My ontology, as outlined in Chapter Two, embraces the possibility of an emergence of hierarchical levels from non-linear processes. From an epistemological perspective this position rests on exploratory ideas from – amongst others – Bateson and Polanyi. Other writers from the canon of Chaotics also take this position.²² This observation is not a positivist assertion, rather an exploratory groping. I mention it here because it is a difference between my own theoretical position and that outlined by Stacey (2003), who is silent on this matter.²³

Having, in the interests of clarity, expressed a few nuances of difference between my work in this Thesis and Stacey's theory of complex responsive processes of relating, I now want to focus on the similarities. In particular, over the next few pages I will pursue an interpretation of the Field Tales from the perspective of the *conversational life of organisations*.

The Field Tales in Chapter Seven, are narratives. It is in the tradition of ethnographic studies that they are written up in this way: Geertz's "thick description"²⁴. A narrative "Certifies itself in the pragmatics of its own transmission without any recourse to argumentation or proof" (Lyotard (1979)). Narratives "convince of lifelikeness" rather than "truth". Narratives are, amongst other things, temporal patterns of interactions of humans and therefore creaturely. They are, by their nature, non-rational: A story read only by the left brain hemisphere can not be fully appreciated as a narrative. Narratives are also "readerly" texts (Barthes (1972)). They invite interpretation, and an interpretation that is outside the control of the writer. We could say, therefore, that a narrative is a "difference which makes a difference" in the construction of meaning:

"Conversations, stories and narratives are complex responsive processes of symbols interacting with each other to produce emergent themes of meaning that organise the experience of those engaged in the conversational activity" Stacey (2003) p351

This is significant to my earlier point about emergence of ontological levels. Let me explain. In Chapter Seven, I presented the field tales. At this point, they were, as laid out on the page, already constructive as narratives. And each story is part of a larger story, which develops over time rather like the chapters in novel. Each is a story-within-a-story. In this current chapter, in the tradition of academe, I now attempt to interpret the narratives, to tease out some meaning from them. I am, we could say, constructing a narrative about a narrative: A story-about-a-story-about-a-story, or more correctly, stories-about-stories-about-stories. This thesis will then be read by external and internal examiners and supervisors, each of whom brings their own unique understanding and life experience to the interpretation of the narrative, making connections and discerning differences-which-make-a-difference. Later, there is a viva interview, to which we each bring our own meta-narratives and possibly exchange ideas and produce a meta-meta-narrative. No one can exercise anything but the most tentative control over this process. The themes are emergent. Bateson might have said that the themes emerging from the viva conversation are of *a different logical type* from the themes conceived in the original narrative.

Having used the viva interview as an example of "reality" being socially constructed in a non-linear and unpredictable way, I should stress that the same is true of all the events described in my Field Tales. Each individual tale is an imperfectly told, qualitative, non-objective tale of meta-meta-narratives emerging moment by moment, as "concept laden abstractions from the flow of experience". It all sounds very unscientific, but in the social "sciences" it is the best we can do!

Bearing in mind this notion that the field experiences are non-linear, complex, recursive patterns; that they are imperfect attempts to capture a few moments of people trying to construct meaning – to sense-make – on the fly as the hurly-burly of human social living swirls around them, we should now turn to the Field Tales for a chaotic interpretation.

In *Thanks Anyway* we would expect that much of the conversation would have been constrained by the formalised setting. We were being interviewed as potential suppliers for a large consultancy project. With a clear context of dominance and deference, we ought not to have expected a free-flowing dialogue. Nevertheless, there was plenty of surprise. A particular display of dominance was performed by Bernard, whose tirade was more an attack on our characters than a reasoned critique. We might have been expected to either fight back or capitulate. We did neither. Something more interesting emerged. Fran changed the context, by on the one level appearing to be helpful and friendly, whilst on the other taking the wind out of Bernard's sails. She acted with some subtlety and irony, and the audience appreciated it. They were quietly amused. The tables were turned.

Surviving that rough ride turned out not to be a matter of the strength of our methodology, the rationality of our approach or the depth of our experience. We survived and eventually triumphed because of the *artfulness of the performance*. The selection panel deemed us worthy of respect because Bernard got up their noses too, and they enjoyed the rare spectacle of seeing him uncomfortable. A public sector decision affecting millions, perhaps billions, of tax payers money was influenced more by aesthetic, tacit and subjective feelings than it was by any supposedly rational decision making process. I am not suggesting that this was an inappropriate way to make the decision, and I suspect many such decisions are made this way.

Questions in Parliament is a narrative in which what was *not* said is very important in making sense of what happened. It is not, however, a matter of the unsayable or the inexpressible in a philosophical sense. It is more a matter of what themes were legitimate in the particular context. A more literal, authentic expression of what Nigel was asking of me, would have been as follows:

Howard. In the previous phase of the project, we worked with McBain as consultants rather than KPWC. We have now switched allegiances and are working with you, although McBain are still around also. Some people in high places who are involved with the project – Bernard Brown for instance – would like to find an opportunity to say that KPWC are not doing the job as well as McBain. Any statistic that supports this position is therefore unwelcome and embarrassing for both of us, since it undermines the way you are perceived, and it calls into question our selection of you.

Now, one such statistic that is doing the rounds is “percentage industry involvement”. I’m not entirely convinced that it is a meaningful statistic, and I know that you are not either. However, if this figure is superficially “worse” in the current phase of the project than in the previous phase, then we ought not to be surprised if a question is asked in the House regarding whether the project is not progressing so well since KPWC picked up the reins.

Since the statistic is a fairly superficial one, I don’t really want to spend any time debating or over-analysing it. I want to hear that the percentage industry involvement is as good as or better than in the McBain phase. I don’t need to know how it was calculated. I don’t really care if you fiddle the figures as long as it comes to the right result and as long as you do not tell me you have fiddled the figures.

In other words, we both know that this whole industry involvement percentage business should be taken with a pinch of salt. But we can’t say that, and there would be absolutely no benefit from trying to make that argument. So let’s just give the bureaucrats what they want and keep them off our backs.

None of this was ever said. Nor should it have been. However, I am quite confident that this is a more accurate reading of the interaction than the words which were spoken. There was no way in which Nigel would have chosen to say this openly with his team sitting around him. I should have read between the lines and understood what was going on. What happened instead was that I took Nigel’s spoken words literally and this created a strong sense of anxiety both for me and for Nigel. Had I interpreted the conversation ironically, then not only would this have removed most of the anxiety from the situation but we also could have enjoyed the irony of the situation together and got some amusement from it.

This snippet of conversation is an good example of how tenuous our meaning-making is. We do not transmit and receive bits of information through language: we construct meaning in a convoluted, recursive and imperfect process.

In *Truth to Tell* it is useful to return to the narrative and describe what happened following the overheard conversation I reported. I finished my breakfast and attended a day-long workshop between some senior MOD people and key suppliers. But for the rest of the day, I participated from a different context than everyone else in the conference room. You will remember that I had heard the protagonists admit to each other that they were not going to tell the truth.

On reflection, this situation now presents me with some difficulties. I now knew that these two senior managers from defence contractors had come along not expecting to tell the truth. I do not know whether, during the course of the day, they actually lied, or indeed if they did lie, what out of what they said was true and what was not. What I can assume, however, is that they gave

performances which were not entirely *authentic* in the sense that Heidegger would use the term. This is what creates the difficulty for me. Does the fact that their performances were not authentic really matter? Everyone else in the room seemed to be comfortable with what they were saying, supremely unaware of the telling exchange which only I had overheard earlier. Conversations seemed to progress successfully, decisions were made and actions agreed. No one came to me at the end of the day saying “I got a feeling that those two were not being straight with us.” For the purposes of this day, was an inauthentic performance as acceptable as an authentic one? Indeed, did everyone in the room really *expect* the suppliers to deliver authentic performances?²⁵

But I am oversimplifying. Whilst the two protagonists had speculated together about whether they would “tell the truth” and concluded that they would not, we do not know what meaning their conversation was weaving. They could not have been proposing that every statement they would make in the next eight hours would be untrue: this would be absurd and impossible. There was clearly some particular, signified and shared understanding of a particular truth, which was either to be revealed or not. And there would seem to be a silent process of shared reasoning leading to the decision that this truth should not be revealed. We have all been in situations from time to time where we have withheld information from someone for what seemed like good and considerate reasons; perhaps the wrong audience was present or the time was not right. From this perspective, it may have been that our dishonest characters were acting out of integrity, or perhaps the “truth” was not conducive to the business of the day. Or perhaps it was nothing more than an ironic shared joke. Yet I must admit that as I sat silently listening to their furtive talk that morning, my initial interpretation of their decision to be untruthful was not a flattering one. I created my own meaning, which was that these people had come along for the day but we should not expect to achieve our desired objective with them, that they were behaving badly. It now seems to me that there was more than a little hypocrisy in my view. Did I believe that everyone else in the room was completely honest all day long?

Clearly, this process of conversational relating is a science of qualities. The words that are spoken have significance only as part of a context, and context is a fragile thing.

In *Masterclass*, we have emergence and paradox mixed together in a few moments. We ask our client group what they think the project is all about. They work this through and come to various conclusions, including the need to develop high performance teams. But no-one believes that the project should result in any measurable improvements in performance. There is a strong mandate from Government for the project, clearly requiring performance cost and time improvements. The government says it wants better value for money. Everyone in the room knows this. Our client group knows that each of them has an important role in the project as a change agent. Taking these things together, it would seem unavoidable that the project would need to deliver measurable benefits, yet this goes unacknowledged. At best, and with some reluctance, they suggest that this is something which the project might do at some undefined point in the future.

I pushed them hard to reconsider. As I see it now, what we were doing was trying to renegotiate the meaning of the project. This was far more troublesome than I had expected, and the more I pushed, the more they supported each other, entrenching their view that nothing measurable could be done. This theme of “nothing can be done” may not have existed before the conversation but came into being from – emerged from – the conversation. At the time, I felt frustrated. Here we had a change programme with change agents who were not hungry for change. Perhaps I did not merely surface the problem, but created it through the way I participated in the conversation.

The meaning that I had perceived in the project did not seem to fit the client group's meaning. But then again, their reluctance to embrace measurable goals might not have had anything to do with the principle of establishing the meaning of the project. They could have been thinking one step ahead. Once the need for measurable improvements has been established, it is only a small step for goals to be carved up into individual targets and deployed to individual group members. One way of avoiding such responsibility would be to deny the need for measurable performance improvements, especially since the people at the workshop were internal consultants who could only influence performance indirectly.

They hate each other brings us close to Bateson's muse of symmetrical rivalry, and also illustrates the flaw in his theory. The rivalry is strong but it does not escalate out of control. Competition between groups is endemic in the armed forces, but something moderates it. That something is the need for cooperation. Armies are a particularly clear case of the coexistence of competition and cooperation: George Mead used them as an example in his considerations of the social forces of conflict and cooperation.²⁶ The rivalry is held in check by the need to unite against a current or potential common enemy.

Considering this phenomenon from a complexity perspective, we might speculate that the relationship between DPA and DLO is influenced by attractors for both competition and cooperation, with events following trajectories between these attractors in patterns which, like the weather, are unpredictable in detail and yet recognisable in general. Yet we might be better served by considering conflict and cooperation as fractal binaries coexisting at infinite levels of detail, rather than as opposites existing separately and in isolation from each other.

The phenomenon also helps to illustrate the troublesome nature of causality in a non-linear social world. We might typically think that the organisation "causes" the rivalry: In other words, that the existence of two separate large groups of people – DPA and DLO – "causes" the rivalry between them, but it would be equally true to say that the rivalry "causes" the organisation. The existence of any group always creates an "other". Organisation structures in the military change, but the rivalry always persists, as indeed does the cooperation. They create and recreate each other down the centuries, along with their associated mythologies.

There is no doubt that the current state of affairs – where DPA buys the equipment and DLO buys the spares, and coordination of the two activities is scant – is not the most effective or efficient. However, it is a state of affairs which has emerged from a complex process which unfortunately is not under anyone's entire control. Any attempt to "design" or "install" a different state of affairs would be fraught with challenges, not least the recognition that any future organisation would also contain both rivalry and cooperation as unpredictable features of the conversational life of the organisations.

From *Curry in the Barn* I would draw out the issue of centralisation and devolution. The scene takes place some years after the start of the project and the project itself is now generally deemed a success. An important part of the project was the formation of Integrated Project Teams. These are multifunctional teams which cut across previous departmental boundaries, bringing together all the skills needed to coordinate the acquisition of major equipment such as aircraft carriers, helicopters and so on. One could view this as a type of devolution, from a central bureaucracy to a smaller, "empowered" team. It seems that there is a view that this has been successful, and that the leaders of these teams are now perceived to have considerable power. However, there is a growing feeling that this devolution has gone too far, and that there is a need to re-centralise some of the activity.

It is worth reflecting for a moment on what centralisation or devolution means in this context. It does not necessarily have anything to do with physical location, although in some cases teams were relocated. It would seem to have more to do with the location of authority and control. So what we have in this case, is a view that the devolution of authority and control has been successful, but also that it needs to be “reigned in”.

In mainstream management theory, the question of centralisation and devolution is typically tackled as an optimisation problem. Each option has strengths and weaknesses, for example centralisation allows greater consistency, whilst devolution offers improved local flexibility (e.g. Johnson and Scholes (1993) p365). The challenge for the manager is therefore seen as striking an optimum “balance” for the circumstances of a particular organisation. From this perspective, there is a “right answer”. However, there is another way of looking at it. First of all, we need to remind ourselves that our organisations are constructs, not things. It is therefore the relationships – the patterns and themes of interaction – that are changing, or that some people desire to change, when they talk of centralisation or devolution. From a complexity perspective, there is no simple rational choice between centralising and devolving, and neither is there a direct relationship between formal organisation charts and structures and how people organise the way they carry out the work. What does exist, is a set of evolving conversational themes linked to the constructs of devolution and centralisation. The themes are paradoxical: we want a high level of consistency and we also want a high level of local flexibility²⁷. We cannot “fix” the paradox, so all we can do is rearrange it endlessly, cycling between different levels of centralisation and devolution.²⁸

Another paradox emerged from this particular conversation. The goal of the project, sanctioned by Parliament and widely communicated inside and outside the MOD, was to improve value for money in the acquisition of equipment. Several years later, the project is considered a success. Yet, after organisational changes costing millions and affecting tens of thousands of employees in the public and private sectors, no-one really knows whether improved value for money has been achieved, or even how this could best be measured. I do not put this forward as a criticism in any way. Rather, I think it helps us to glimpse a different perspective: a shadow perspective. Behind the need to construct a legitimate narrative about the success of any project, this is often the reality of organisational life.

Moving to the tales from Global Corporation...

Board Room, Trafalgar Square was very much a narrative about subjective, qualitative judgement. Chris had a good idea in advance about the rational content of my presentation. My task was to make a make a good performance which convinced of my competence. The question for Chris was not “Is a purchasing project a good idea?”, he already knew that it was. The issue for him was “Can this person – Howard – do this job? How will the other senior managers react to him? Does he recognise what the problems and issues are?”. The most important clues were subtle ones: tone of voice, body language and gesture, facial expressions. And a common feature of pitching to Chief Executives is the shortage of time: one has to be very convincing very quickly. Despite the inside track through the relationship between Ted and Chris, there was a competitive element to this sales pitch. Global had a general preference for another consulting firm. Some months later, I asked Chris why he gave the job to us. He said it was because he was convinced by my enthusiasm.

In *Joes Golf Clubs*, Joe promises the current supplier that whatever happens in the purchasing project, they will continue to be the supplier. As I overheard this conversation, I immediately began to weave my own meaning from it. I quickly started to make new judgements about Joe’s ethics and character. He was undermining “my” project, removing the possibility for

competition between potential suppliers. Combining this with his reputation as the source of endless free gifts from suppliers, I couldn't help seeing him as an example of the old guard in purchasing, with all the bad habits and lack of professionalism. But on reflection I would have to accept that this was not the way his colleagues at work saw him. They held him in quite high regard, considering some of his initiatives, which I described in Chapter Seven, as important steps in improving the company. Within the company they did not seem to see a problem with free gifts from suppliers, golfing trips etc. And I also have to accept that my eavesdropping revealed only Joe's half of the phone conversation. It may have been that the current supplier was overly concerned about the project and needed some reassurance, or that assurances had already been given to the supplier, which the project now called into question. And deeper reflection would have revealed some hypocrisy in my perspective: my own employers did their share of business entertaining, including all the big seasonal sporting events.

I am sure that Joe would have made a different sense of all this. No doubt from his point of view he was perfectly justified in telling the incumbent supplier that they had nothing to worry about. From his perspective, I expect he believed that the gifts did not influence his decisions, and perhaps he even thought it rude to refuse. The fact that he shared the gifts around the company rather than keeping them to himself, would presumably have reinforced his view that his actions were honourable.

As the project progressed following the scene described, Joe continued to participate but I saw his involvement as rather reluctant and cynical. We were never close. These events certainly influenced how I made sense of the situation and how I saw Joe. My sensemaking was subjective. I developed some prejudices. I did not invest further effort in developing the quality of my relationship with Joe.

Out of line, pal describes a scene where Jack, the Purchasing Director gets angry with me and confronts me. I think it is fair to say that neither of us was acting entirely rationally. In speaking out and asking one of the suppliers to answer some questions about their tender document I was, from one perspective, simply trying to get the purchasing process back onto an equitable track. Earlier events had given a farcical air to the proceedings. From another perspective, however, I was usurping Jack's role, and however poorly he was performing it, this was not my place. Both of us did a poor job of resolving the situation, escalating it instead.

Twenty-Nine Percent could be an example of non-linear emergence in a social situation. I should stress that I am not asserting this as a positivist "fact". Instead, I am pointing to an experience and exploring it, speculatively. Put simply, emergence in social situations means that things happen and we are not able to attribute a cause or an explanation to them. The particular phenomenon that interests me here from the narrative is that, for a range of un-related purchase categories, in each case a cost reduction of (more or less) twenty-nine percent was achieved. Why should this happen? Could it be that for some reason the client organisation was always twenty-nine percent less effective than it should have been? We have to recognise this as a possibility, but it seems intuitively unlikely. Was some form of fraudulent activity going on, where all supplier prices were inflated by the same percentage and somehow the excess was shared between conspirators? If so, we did not find any evidence for this, and it sounds quite a fantastic theory. There is another possibility, a possibility that this outcome – the twenty-nine percent savings figure across a range of categories – was an *emergent pattern*. Cohen and Stewart (1994) describe complexity as "the collapse of chaos", meaning that a highly complex process can demonstrate an unexpectedly simple pattern. We cannot say that the complex process "produces" the pattern, since this would be a causal logic and complexity doesn't seem to work that way. We can say that the simple pattern "emerges" from the complex process, as a "feature", but we cannot describe a set of events which link the complex process to the emerging "feature".

We could suppose a situation where this twenty-nine percent figure emerged in a dialectical and conversational interaction. Paul Slovic (Slovic (2002) and Slovic (2002a)²⁹) has demonstrated that in situations of uncertainty people have a strong tendency to be influenced in their judgements by any figure, however irrational, that presents itself at the crucial time. This figure then becomes a “heuristic”, influencing judgement under uncertainty. From this viewpoint, once a twenty-nine percent saving was achieved in one category, this could exercise an unconscious influence on future events. Such an “explanation” may not be radically different from a description of this figure emerging as a conversational theme from repeated interactions. I should stress again that this musing is speculative. The phenomenon may simply be a matter of statistical probabilities or coincidence.

Summarising this consideration of the field tales from a complexity perspective, we can see that many of the features of complexity have analogues in the themes of the field tales. Quality of participation is highlighted in *Thanks Anyway* and *Board Room, Questions in Parliament, Masterclass and Out of Line, Pal* highlight the tenuous nature of conversational meaning-making. Paradox is emphasised in *Curry in the Barn*. Pattern and form in *They Hate Each Other* and *Twenty-Nine Percent*. Overall, a consideration of the Tales through the frame of complexity highlights the logical types immanent in the dialectic of these conversations. The quality of our participation changes with the reflexive nature of our consciousness:

“[Study of management, and management itself] needs reflexivity to consider the investigator’s own role in knowledge production, as well as being a participant in ideological frames. In its more post-modern guise, this consideration extends to the consideration of the tacit, the implicit, and the unsaid, but includes that which seems to be unsayable and unrepresentable, including silence and spacing as well as talk. This aesthetic dimension has been especially emphasised in recent social anthropology.”
Linstead (1997) p88

The Enchanted Supply Chain

“During the depression, from about 1930 to 1938, my family – two brothers, two sisters, my mother and myself – lived in a Mexican neighbourhood in Los Angeles. We met several pleasant Mexican youths at a settlement house and invited them to join us for some sessions of Poker. We played for stakes of atomic minuteness, but even so, we soon became aware that our new friends were cheating. Embarrassed, we pointed out that we didn’t play that way. The Mexican boys smiled amiably and said, “But this is the way we always play. We can’t play any other way.” So we gringos held a discussion and decided that we too would cheat. But this worked out very badly for us because we were very clumsy cheaters. Besides, we had played our kind of poker for so long that we could not really enjoy cheating, even when we got away with it. So we held another discussion. This time, the Mexican boys suggested that we all play as usual. They would cheat with might and main, and we would play fair. But if one of us caught one of them cheating, the catcher would get all the cheaters chips. This new set of rules worked marvellously well. The Mexicans outdid themselves in clever deceptions, and we, in the course of many sessions, became phenomenally expert at detecting “aberrations” in their play. Best of all, the new system evened out the odds, so that neither of us won consistently from the other. *While the two parties may be willing to play together, yet each carries with himself a set of habits; a set of skills that he is unwilling or unable to abandon. The very process of their interaction may lead to the emergence of a new game with new rules.*” (Wax (1971))(my italics)

In this section, I want to focus on emergence in non-linear dynamics, and in particular that class of emergence which Cohen and Stewart (1994) call *complicity*. This phenomenon refers to the emergence of new patterns from the interaction of two or more complex processes. The quotation above – from another anthropologist – is provided as an example. Two quite different behavioural styles – we might say cultures – are interacting. Neither group finds it possible to adopt the other’s style. Eventually, a new, third, pattern of interaction emerges which works “marvellously well”. Yet it is not a minor accommodation of the previous style of either group but a “new game” altogether. The “*very process of interaction*” has led to the “*emergence*” of a markedly different set of behaviours.

As we explored earlier, there is an epistemological challenge presented by the phenomenon of emergence in non-linear processes. In our society, we have become accustomed, over the last several centuries, to applying to our reasoning a particular notion of causality: One set of events or actions produces other events or actions, and given certain conditions the sequence of events is consistent and predictable. Further, since Galilei (Goodwin (2000)), we have restricted scientific enquiry to those properties in the world which can be quantified, such as mass, position and velocity. This form of reasoning is not “wrong”, since it has enabled the human species to make great progress in science. The issue is that it is imperfect, and we have taken it to extremes.

Weber (1946) called this “*The disenchantment of nature*” In a disenchanted society “there are in principal no mysterious, incalculable powers at work” and “one can master all things by calculation”.

We have fallen into the habit of thinking that linear causality is universal. It is not:

“[W]hat has been revealed by science itself is that much, probably most, of nature cannot be predicted and controlled... but we have to interact with the complex systems that surround us because we are part of them.” Goodwin (2000b) p43

Further, we have become used to defining the measurable properties of the world, those to which we can apply our linear mathematics, as “primary” properties, and labeling the rest as “secondary” qualities, out of scope of our inquiry. These “secondary” properties, or *qualia* include our feelings about and for the people we associate with at work, feelings of enjoyment at carrying out a particular task, our sense of the “rightness” or “wrongness” of particular decisions in ambiguous circumstances, feelings of closeness or antipathy... the “reality” of organisational life. We might like to think that all such qualities which we experience are rational. Perhaps in some sense they are. But not within the frame of our mainstream science, or our legitimate management theory.

The consequences of ignoring these “secondary” qualities are serious:

“Our scientific and technological culture has emphasised quantities of everything as the measure of achievement and fulfilment, and in doing so has progressively isolated individuals from each other and from nature. Quantification and control of nature, once acting through technology as a liberating force for humanity, have now reached the point of enslaving everything they touch... The “bottom line” of profit as the constantly scrutinised criterion of success in the unregulated marketplace is a major quantity that enslaves the corporate sector.” Goodwin (2000) p47

As we have seen, the reasoning of “more is always better” is incompatible with what we know of the living world (Bateson (1979)).

The distorted epistemology which we have evolved does not destroy the qualitative, it forces it underground.³⁰ In a practical, workaday sense, people in organisations regularly interpret what is happening around them qualitatively, apply their intuitions, and construct meanings together through their interactions. But they do so in the shadow, in what I have called the “Occult Supply Chain”. If necessary, they create quantitative cover stories to legitimise their qualitative actions.

A number of thinkers have noticed this aberration, calling for the reintroduction of a science of qualities and a re-enchantment of science, nature and organisational life (Goodwin (2000a,b) Reason and Goodwin (1999), Prigogine and Stengers (1984), McGrath (2002), Berman (1981), Griffin (1988)). What we are learning from the science of complexity seems to support these proposals: There are distinct limits to the extent to which we can control the world around us. We have to acknowledge these limits and adjust our thinking accordingly, recognising that control may not be

appropriate, and that our focus should encompass *the quality of our participation* (Stacey (2003), Reason (2003)).

In this section, I therefore focus on the quality of participation from a supply chain perspective: One might say on the “reenchantment of the supply chain”. In particular I am looking at the Field Experiences in terms of unexpected or enjoyable experiences, in terms of the *qualia* of the field tales. Goodwin (2000a,b) points out that the health of an ecosystem is as much a matter of the quality of the birdsong as the quantitative diversity of species. A human analogue for this would be the quality of playful, free-flowing conversation; what Bohm (1987) calls dialogue. Merleau-Ponty describes it as follows:

“A genuine conversation gives me access to thoughts that I did not know myself capable of, that I *was* not capable of, and sometimes I feel I *followed* in a route unknown to myself which my words, cast back by the other, are in the process of tracing out for me.” Merleau-Ponty (1964) (p13)

Bakhtin highlights the possibilities created by such dialogue:

“It is quite possible to imagine and postulate a unified truth that requires a plurality of consciousnesses, one that in principle cannot be fitted within the bounds of a single consciousness, one that is, so to speak, by its very nature *full of event potential* and is born at that point of contact among various consciousnesses.”
Bakhtin (1984 p81)

Turning to the Field Tales, we should look for some subjective examples of something approaching free-flowing dialogue.

Hot House Flowers describes four people who are reasonably comfortable in each other’s company. There is horseplay and mickey-taking, occasional digs at the system and the surrounding bureaucracy, but at the same time some sense of purpose. The four of us are supposed to be in “control” of a team of over sixty consultants who are supporting several thousand MOD staff across a range of projects, and the weekly flash report session is a key element of that control. We are, of course, not really in control at all. We visit the teams but we are not with them most of the time.

They send us weekly reports (which are themselves semi-structured narratives) and we have to try to make sense of what is going on and decide what to do next, which includes giving encouragement, challenging, questioning, making suggestions and so on.

Much of our discussions in the hot house are attempts to make sense of something from a distance. Often, four of us read the same report and discuss it and try to see whether we get the same impression and meaning from it. How does the team feel about their progress? How do the consultants feel about the team? How does the team feel about the consultants? Often we are still not sure after reading the report. Sometimes we phone up one of the consultants in order to get a better “feel” for what is going on. Collecting more *qualia*.

What we are trying to do is get from discussion to dialogue, to some degree of constructive openness, both with the teams and between the four of us. No doubt we sometimes keep our thoughts to ourselves, but as the weeks go by we become more comfortable about speaking up if something is troubling one or more of us. On one occasion not covered in the tale, I sensed a more downbeat mood in the room from Andy and Richard. I asked them if there was a problem. They were a bit reluctant to admit it at first, but eventually with a little more pushing from me, they opened up. The problem was that they had both come to the conclusion that their boss had misrepresented their current jobs to them. They were used to having quite a lot of

responsibility, and felt that their current jobs were not sufficiently challenging. This created a possibility for different and novel line of conversation to investigate what could be done about it. We could not fix the problem, but Robert and I were able to understand Richard and Andy's participation in the project more adequately, more qualitatively, as a result of this conversation.

Triumph Stag of the Skies from the Field Tales is the closest example I found of a quasi-firm (Blois (1972), Schumacher (1978)), where the boundaries between two organisations were relatively indistinct, and where there was a strong level of teamwork between the members of the two organisations – to the point where it was difficult to tell which organisation an individual worked “for”. The supply chain theory suggested that this quasi-organisation should take on an “identity” of its own, distinct from the two parent organisations. It certainly was the case that the Tornado IPT members themselves believed that something extraordinary had happened, and the cost and performance benefits which emerged for both organisations were beyond expectations. As I stood in the middle of the shared office space, with all kinds of activity going on around me, the judgement about whether these people were a team was entirely a qualitative one, based on conversations, tone of voice, expression and posture.

Morning after the night before goes rather more behind the scenes of organisational life, but does seem to highlight some realities regarding quality of participation in business. The anthropologist Victor Turner³¹ used the concept of *liminality* (drawing on Van Gennep)³²: Liminality is about being “betwixt and between the positions assigned and arrayed by law, custom, convention and ceremonial”. Liminal events are therefore on or beyond the boundaries of the normally legitimate, where concepts of role, position and expectation break down. Such liminal events can be “rites of passage” marking a movement from one state of relationships between individuals and groups to a new state of affairs. Translating this into more everyday language, we can see that it is a common element of business life: people from different organisations with potentially quite different attitudes sometimes get together for a blow-out, have a good time and, next morning, see each other in a new, and better light. It doesn't always work out so successfully in practice, of course. Turner terms this new-found closeness “*communitas*”:

“Spontaneous *communitas* is richly charged with affects, mainly pleasurable ones. Life in “structure” is filled with objective difficulties... spontaneous *communitas* has something magical about it... structural action becomes arid and mechanical if those involved in it are not periodically immersed in the regenerative abyss of *communitas*..” Turner (1977 p139)

Bakhtin (1984) writes similarly of the carnivalesque. We gain greater closeness through stripping away (literally in my example) hierarchy and formality. Similarly, Stacey (2003) emphasises the need for some level of deviance in organisational interactions.

Summary

This Chapter considered the ethnographic accounts from three perspectives.

The Field Tales were first considered from the perspective of *ritual*. We considered ritual as a dialectical process of sensemaking. Legitimate, possibly sacred, themes of rationality and objectivity appeared dominant. However, influential relationships and beliefs, sometimes incompatible with legitimate themes, exerted a strong influence on actions and decisions. We then considered the field tales from a *complexity* perspective. A number of analogues between complexity and conversational interactions were explored. Finally, the tales were considered from the perspective of *emergence and the quality of participation*. Here, we saw the unpredictable nature of events and the importance of deviant or unconventional behaviour.

Our reflections on the field tales show people struggling to make sense of recursive spirals of complex social interactions. Much of this sensemaking is tacit. Crucial to the quality of effective sensemaking is *intersubjectivity*.

This chapter brings Section 4 of the Thesis: “Field Accounts and Interpretations” to a close.

The following and final section, Section 5, addresses the research questions and considers the potential implications of the views developed in the Thesis.

Endnotes

¹ There is a wide literature on the subject of exchange in the anthropological and sociological canon. This is dealt with in more detail in Chapter Three (The Economics of Flatland), but it is worth repeating a few key points here. Mauss (1974) was a pioneer in raising questions about exchange. His work posits an alternative to the arms-length economic system that is so common in contemporary society. Importantly for this current chapter, he challenges the modernist assumptions about the nature of man as acquisitive and greedy. Mauss noted that the phrase “self-interest” has no equivalent in premodern languages. Today, even some economists are starting to recognise the weakness in their theories of human nature: “In the long run, the economics discipline will realise that the old assumptions of rational, ...self-interested individuals is not only an inexact and special approximation, but also inconsistent with a scientific view of human nature...” Ben-Ner and Putterman (2000)

² There is a non-trivial question about whether the themes organise the relationships or the relationships organise the themes. From my perspective, the question is unanswerable, since it assumes a Newtonian causality. Both organise each other simultaneously.

³ Stacey’s work in this field proposes a framework: that of legitimate and shadow; conscious and unconscious, and formal and informal. Given that in Stacey’s epistemology, as in mine, there can be no one “objectively right” framework, the differences are ones of emphasis, providing alternative insights, rather than positivist answers.

⁴ The repeating bifurcations look a little like Robert May’s bifurcation diagram from the early days of nonlinear dynamics. This pattern similarity may be non-trivial (See Chapter Three)

⁵ The use of the word sacred here is a little troublesome. It seems we have to accept degrees of sacredness, by which measure this example would only be “mildly sacred”. The acid test seems to be the consequences of breaking the taboo, which could range from serious embarrassment, as in this case, to (perceived) life-and-death in other cases. One could argue that only the latter is truly sacred.

⁶ “Best Practice” is, itself, sometimes treated as sacred in the UK and US business world. This is evidenced by the billions spent annually on the latest management fad. Rarely is there “objective evidence” that these fads have any effect on the financial performance of the faddists.

⁷ Reflecting on this conversation reminds me of an anthropological account of the Teduray people of Figele in the Philippines (Schlegel(1998)). They have a word - “fiyo” - which means “just-right”, exactly as things ought to be. The removal of this maverick was “fiyo”.

⁸ Since the field experience, legislation has led to audit firms being much less able to sell consultancy to their clients.

⁹ Another shadow theme concerns the career paths of senior MOD people. Often, on retirement from MOD, senior employees take up positions with defence suppliers. This would seem reasonable, since their experience is valued by suppliers, but the potential impact of this fact on the legitimate theme of rational, objective supplier selection is very much left in the shadow.

¹⁰ Perhaps we have messed up our epistemology in relation to commerce and trade, committing an error of logical typing in our 21st century supply chains. Steered by the “logic” of the dualism of Descartes, the physics of Newton, the “invisible hand” of Adam Smith and Darwin’s theory of evolution, we have cloaked ourselves in a false sophistication. We try to treat our objects as if they held no significance to us, other than the value attributed to them by our newly-sacred market. This is the legitimate milieu. Paradoxically, our social minds, formed during the Pleistocene era and little changed since, still cling to the need for sacred objects. So we end up with disposable sacred objects: keeping up with the Jones’s:

“Western capitalism in its totality is a truly exotic cultural scheme, as bizarre as any other, marked by the subsumption of material rationality in a vast order of symbolic relationships. We are too much misled by the apparent pragmatism of production and commerce. The whole cultural organization of our economy remains invisible, mystified as the pecuniary rationality by which its arbitrary values are realized.” Sahlins (1993)

¹¹ I use the term Chaotic here to signify both Chaos “Theory” and Complexity “Theory” (could have said Chaordic)

¹² Carried out as part of a research fellowship at Cambridge.

¹³ This bears some similarity to the Social Behaviourism of G H Mead

¹⁴ Bateson borrowed from Lewis Frye Richardson’s arms-race model, though the term schismogenesis is Bateson’s.

¹⁵ The anthropological contents of Naven are skipped over here for reasons of space, but it is a fascinating story encompassing *inter alia* ritual, killing and transvestism....

¹⁶ I didn’t think of this at the time of the publication of Naven, only adding it as a second Epilogue over twenty years later. He also visited Bali, where he singularly failed to identify examples of schismogenesis, which if anything supports some of the claims made in this section. I’m not sure Peter Senge gets much further than Bateson.

¹⁷ Lest my assertions here appear too fanciful, I should point out that some of the luminaries in the world of non-linear dynamics have been thinking along similar lines: Ralph Abraham (1995) has coined the term *Erodynamics* which “consists of application of the mathematical theories of nonlinear dynamics, chaos and bifurcations to models in the social sciences”. Marilyn Strathern has also started to apply some of these ideas in Anthropology. (Strathern (1994))

¹⁸ This leads us to see managers as “participants in an emerging inquiry” (Stacey (2003)) and stories as themes in complex processes of relating

¹⁹ For an excellent parallel critique of systems thinking, contrasting it with complexity thinking, see Dimitrov (Undated)

²⁰ I do, however, believe that there is “Noisy chaos”, which is only partially deterministic and yet displays some of the mathematical characteristics of mathematical chaos (Crutchfield (1983)), and there may be “noisy complexity” too.

²¹ Another point of difference between the position which I have developed throughout this Thesis and Stacey’s theoretical position is one of emphasis. Stacey chooses to concentrate entirely on the conversational life of organisations, identifying the interaction of conversational themes as the focus of his work. I find the interaction of conversational themes to be very important also, but widen the stage somewhat. My tentative Matrix model of languaging, sensemaking and relating is not allied to a specific theory of group behaviour or psychotherapy. I stay open to the possibility that inner psychological life is a mirror of interpersonal relating, to the possibility that mind is a “silent conversation and private role-play of an individual body with itself” (Stacey (2003) p320); but the acceptance of this position is not a key part of my theorising, nor essential for it. Additionally, I see the possibility for a multiplicity of metaphors connecting non-linearity and complexity with human and social phenomena. So, from my position, not only could the interaction of conversational themes divulge an immanent non-linearity, but also the behaviour of humans in social settings, the artefacts created, the rituals performed, the constructs imagined, the aesthetic sensibilities – all could have non-linear, emergent dimensions. Any “difference which makes a difference” – from the letter we did not write to the firmness of a handshake - can be a part of a dialectical dance of interaction: I feel no compulsion to fit all of these into a class of interactions called “conversations”. To clarify, many other writers assert non-linear features in the human and social domain. I stay open to the possibility that some of these may be equally as “valid” as Stacey’s conception of complex responsive conversational processes

²² References are cited in Chapter Three

²³ Stacey identifies a contrast between legitimate and shadow themes in processes of relating, and I have already made use of this insight. I would like to add to this some further distinctions. Within the framework of the Matrix (Chapter 9 Fig (39)), it would seem that we need to exercise care in where we locate the legitimate and the shadow. In the more positivist (Boisot) version of the model,

one might argue that the shadow is to be found in the less codified, more tacit sectors of Boisot's box. From the more constructivist perspective which has now emerged, it is not so straightforward. A shadow theme could be just as extensively languaged, related and conceptualised as a legitimate theme: the sensemaking process is identical, only the interpretation and the context differ. It is a matter of *appropriateness*. There is, however, an opportunity to maintain the distinction between the tacit/ineffable and the less tacit, more consciously constructed. That which cannot be languaged or shared, which seems inaccessible even to metaphor, remains "unsayable". And, as explored in Chapter Two, the unsayable is crucially important to our sensemaking and to all forms of human creativity, including business innovation.

²⁴ Geertz (1973)

²⁵ I suspect not. Our culture seems to be deeply cynical about the world of business. David Firth puts it well:

"One of [our] core beliefs is: Bosses are untrustworthy. What a dreadful generalisation... but name me more than two characters who are bosses from works of literature, of film, or theatre that are not deceitful and malevolent. Our society thrives on images of bosses who do us down, who trick us, who exploit us. From Gradgrind in Dickens to Mr Burns in *The Simpsons*, in comics and in the movies, bosses are not to be trusted. The boss who tricks us is a deeply held in our consciousness as the policeman who says: "evenin' all!" Firth (2001)

²⁶ Mead (1934)

²⁷ It may be that the fashion for "matrix organisation" is simply a way of languaging this paradox.

²⁸ I was tempted to make reference here to the quote widely attributed to Gaius Petronius Arbiter ("210AD") about organisational change creating "the illusion of progress". However, the attribution is probably false: the earliest sighting appears to be in Townsend's "Up The Organisation" in 1970 (Townsend, R (1970), *Up The Organisation*, Knopf, NY).

²⁹ Slovic et al (2002)

³⁰ From a sociological perspective, we could think of it in terms of Habermas' system world eclipsing the life-world (Habermas (1968))

³¹ Turner (1977)

³² Van Gennep (1960)

**SECTION 5:
CONCLUSIONS
AND POTENTIAL
IMPLICATIONS**

CHAPTER ELEVEN: ADDRESSING THE RESEARCH QUESTIONS

“It would be an oversimplification – it would even be false – to say that science necessarily advances by the construction and testing of successive working hypotheses... Our concepts are loosely defined – a haze of chiaroscuro prefiguring sharper lines still undrawn - and our hypotheses are still so vague that rarely can we imagine any crucial instance whose investigation will test them”. Bateson (1973) p80

Introduction

Previous chapters have provided the context for this current chapter:

Chapter 2 gave an overview of current supply chain theories relevant to the research.

Chapter 3 presented a critical review of the epistemological foundations of these current supply chain theories.

Chapter 4 introduced an unorthodox epistemology and a “heretical” research agenda to be applied in the Thesis.

Chapter 5 introduced the research questions. It also introduced a set of tentative models or “ways of thinking” about the research questions.

Chapters 6 and 7 outlined the research design and methods applied.

Chapter 8 presented narrative accounts of the field experiences.

Chapter 9 described the further development of theoretical models, influenced by the field experiences and further reflection.

Chapter 10 presented a subjective interpretation of the field experiences, drawing on all the above.

In this chapter, the research questions are addressed against this context, and against the background of the lived experience on which the Field Tales were based, some of which is necessarily tacit. I also further highlight experiences from the Field Tales to support my claim that *our supply chain theories contain epistemological flaws*.

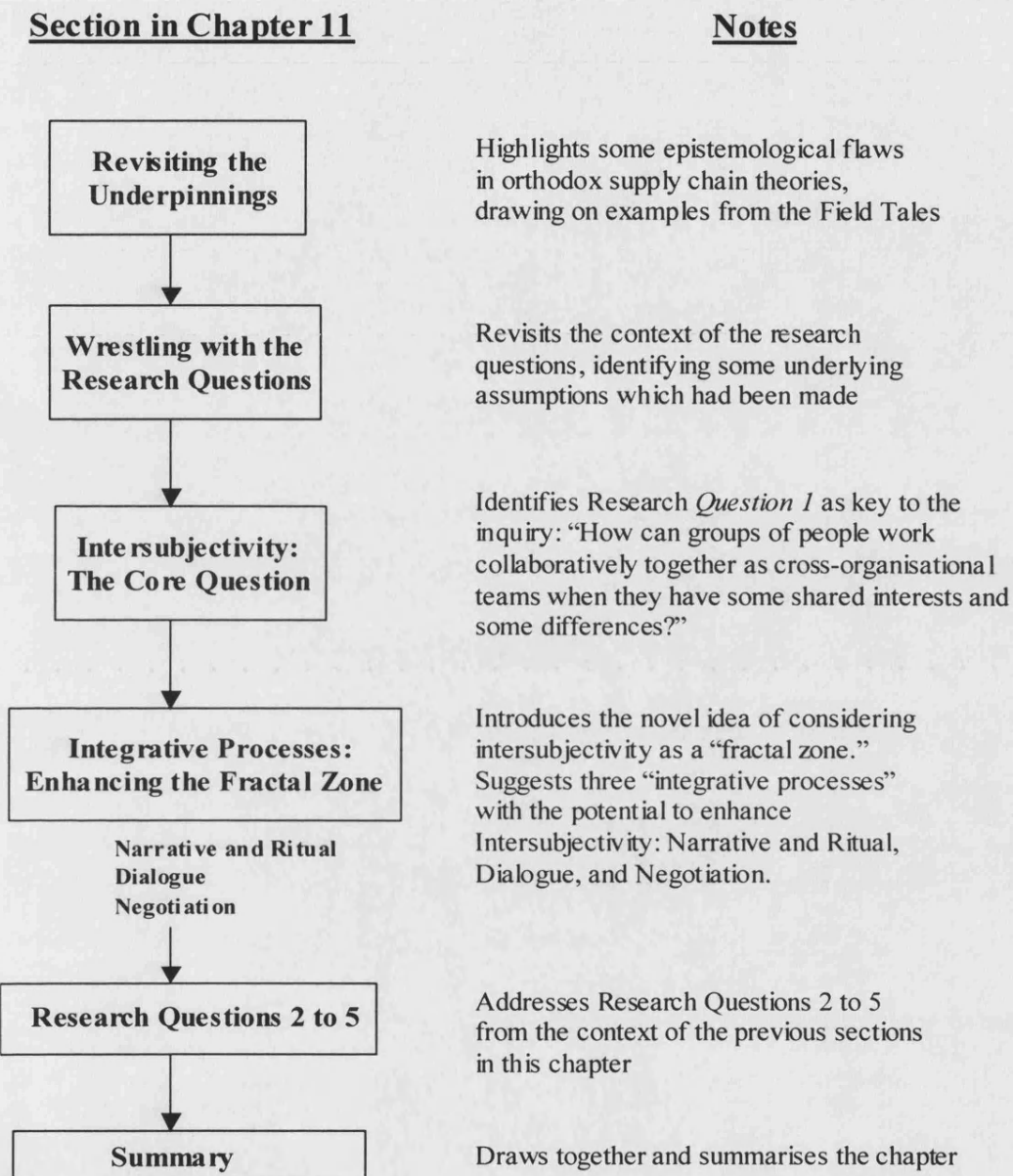
Turning to the research questions themselves, I consider the process of interaction between people as a *fractal zone*. Drawing on this metaphor, I ask: “How can *intersubjectivity* be enhanced?” Applying the Matrix Model introduced in Chapter 9, I propose a range of *Integrative Processes* which might enhance intersubjectivity. This frame is then applied to each of the research questions in turn.

In summarising this chapter, I note that whilst we sometimes strive for improved participation at work, our prevailing myths inhibit the quality of our participation.

In order to preserve the “flow” of this chapter, some of the detailed references have been moved into the endnotes.

Fig (40) below provides an overview of the structure of the chapter.

Fig (40) Structure of Chapter 11



Revisiting the Underpinnings

In Chapter 3, I highlighted the – largely tacit – epistemological assumptions which underpin our orthodox management theories. These were presented under four headings: *The Economics of Flatland*; *The Occult Supply Chain*; *The Non-Elephant Supply Chain*, and *Half a Brain*. I suggested that the assumptions of orthodox theories were flawed.

In the previous chapter, Chapter 10, we considered the Field Tales from three perspectives. Firstly, the tales were considered from the perspective of the *Ritual Supply Chain*. Here, equipped with definitions of ritual and sacred, a taxonomy of conversational themes, and a tentative model of the recursive and dialogical process of sensemaking, we interpreted events. Secondly, we considered the Tales from the perspective of the *Chaotic Supply Chain*. Here, the metaphors of the chaotic attractor and the sensemaking model were drawn together, and combined with ideas about narrative construction and complex processes of relating. Finally, the tales were considered from the perspective of the *Enchanted Supply Chain*. From this point

of view, the focus was on the phenomenon of emergence from complex processes. The Tales emphasised the need for a science of qualities in interpreting human relating.

We can now take the epistemological critique of Chapter 3, and apply it to the field experiences of Chapter 9.

In *The Economics of Flatland*, we saw that Homo Oeconomicus is not a valid model of human nature, and yet supply chain theories expressly or tacitly accept this myth about human nature.¹ Humans certainly have the potential to act as economic “man”, but they also act otherwise. Sadly, by creating and endorsing this myth, we inhabit and become it with increasing fervour. Our Field Tales showed some business decisions being made, in context. The conversations and actions in *Thanks Anyway*, *Masterclass* and *Would Ten Million Dollars be OK?* seem not to be the result of any economic maximisation algorithm: they do not even seem strictly financially rational. We could consider them as subjective, dialogic and aesthetic.

In *The Occult Supply Chain*, we saw that orthodox theories about supply chains approach anthropomorphism and yet also, paradoxically, objectification of supply chains. I suggested that supply chains could be productively considered as webs of conversations and interactions, and that these webs are metamorphic, recreating themselves and their meanings in a continuing dialogic flow. This meaning-making encompasses both legitimate and shadow themes, with each influencing the other. We can see in the Tales that actions and conversations are ambiguous. Often it is difficult to understand what is going on without knowing things which cannot openly be said. This visceral, emotional, tacit supply chain world does not fit with the theoretical picture of people speeding value to the customer, or leveraging critical assets: this is simply not what they are doing (e.g. *Questions in Parliament*, *Masterclass*, *Out of line*, *pal*).

In *The Non-Elephant Supply Chain* we saw that people cannot manage (as subjects) supply chains (as objects) because supply chains, as well as being constructs, are best understood as non-linear processes, and so causality will not operate in the way orthodox theory predicts. Outcomes will be characterised by surprise. We have no choice but to reason by analogy or metaphor in our business lives. Managers must participate in supply chains, but they can, to some extent, choose *how* they participate. I found myself facing just this challenge in *Masterclass*, when what I thought was a rational request for cost reductions was vehemently resisted by the client team.

Half a brain raised the issue of *integration*. Our reductionist left brain influences strongly our current management theory. Our more tacit, pattern-recognising right brain, if given the chance, could add broader context and move us toward a theory worthy of our humanity, from the logical to the eco-logical. Only a theory of management that applies our full epistemological capability, including both the aesthetic and the quantitative, can help us to see the “pattern which connects” and make more wise and fully-human decisions. Going beyond a way of thinking which has been dominant for centuries will not be easy: Our Tales offer us nothing more than rare, liminal moments.

In this current chapter, I shall propose a range of *integrative processes* which could help us toward improved *participation*.

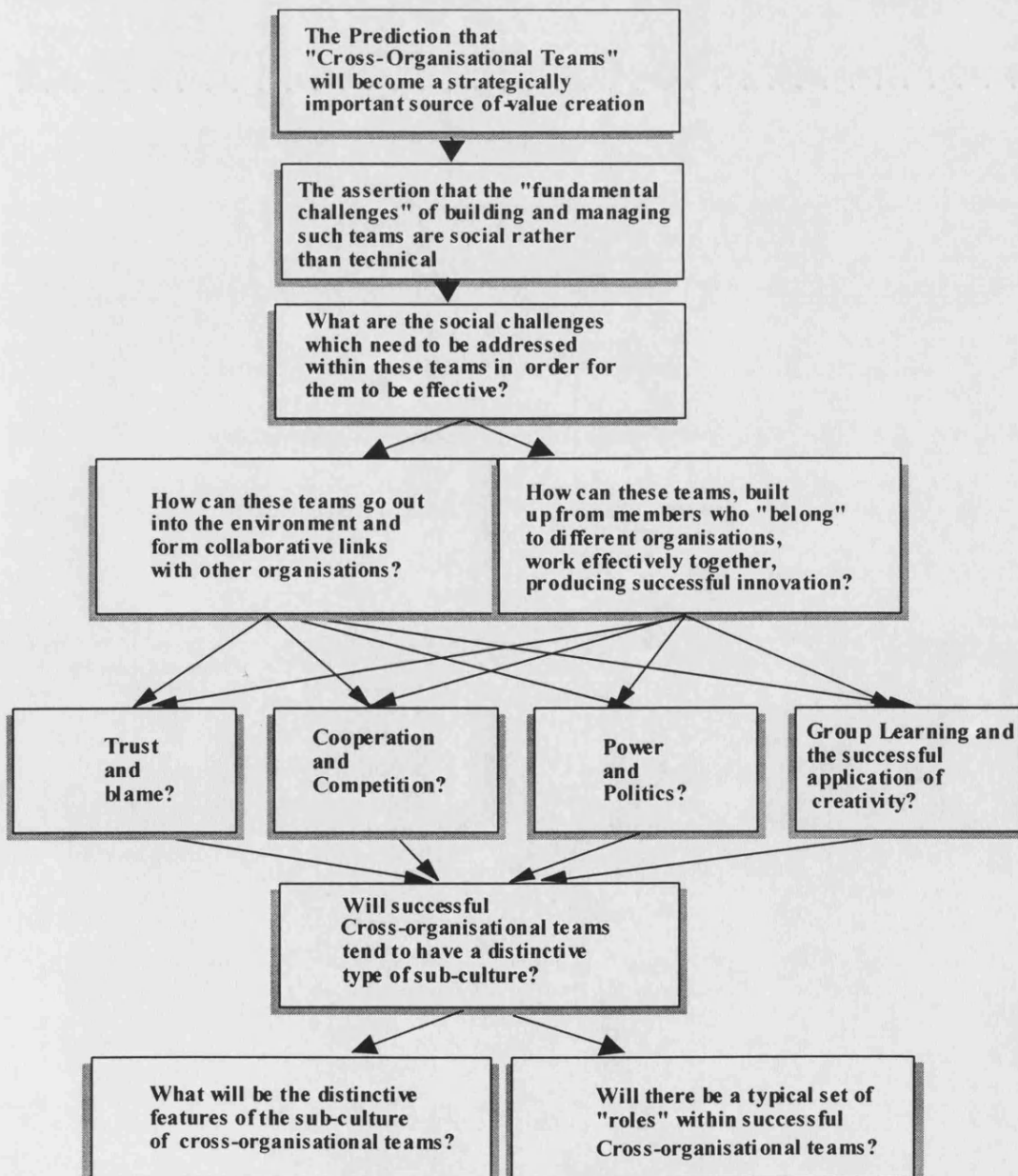
Wrestling with the Research Questions

“The great questions are the ones that an intelligent child asks and, getting no answers, stops asking.” George Wald²

“Some problems are just too complicated for rational, logical solutions. They admit of insights, not answers.” Weisner (1963)

It is usual at this stage in a research Thesis to return to the questions to see if we can find any answers. My chosen research questions were deeper and more elusive than I had realised. Ultimately, they are questions about what it is like to be human, and how humans can cooperate. These are profound philosophical questions. Are there any real answers out there to be found, or do we all construct our own, particular and personal interpretations in a process of relating? My views as I write this chapter are significantly different from the views I held several years ago when I started the project. So let us revisit the context of the research questions outlined in Chapter 5. The diagram is repeated below, in Fig (47)

Fig(47) The Context of the Research Questions (1995)



Reading the diagram from top to bottom, we can see that it starts with an assertion about cross-organisational teams becoming strategically important to the creation of value. Strategically important? Creation of value? These words now seem strange to me. I am embarrassed to see myself using the weasel-word *value* so freely. *Creation of value*: What does that really mean? Conning consumers that they need your products or services? Offering Homo Oeconomicus something which tickles his/her algorithms? Science, and economics, claim to be value-free, yet business “value” is value-laden. It is the abracadabra of the managerial world, a sacred word, a spell-casting word. Accusing someone of “not adding value” is not to be done lightly. Adding value is worshipped noisily in boardrooms by people who pretend to know what it means. Behind this short phrase lies a cosmology of myths laid down over centuries and rarely impugned. This supposed value we are adding is a soul-less and dehumanised thing. This “value” is mammon. How can this be special or sacred?

Strategically important? What was I getting at here? I think I had it in mind that companies which collaborated closely would be more efficient, more effective, or more innovative. Now I’m not so sure. Certainly cooperation creates potential for this to happen. Perhaps, in a different world, cooperation would have a dramatic impact, but in our current social and economic environment I am now more pessimistic. I will explain my reasoning.

The next box down in Fig (47) also appears to contain a rather positivist assumption: “The fundamental challenges of building and managing cross-functional teams are social rather than technical”. I am talking here as if a team were a thingish-thing and the manager could manipulate it. Today, I would rather be guided by Gareth Morgan’s phrase:³ “Farmers don’t grow crops. They create conditions in which crops can grow”. This is a suitably creatural metaphor for these putative teams. At best, managers may be able to cultivate conditions in which teams may grow, but with no guarantees, and not without getting involved, participating.

My questions continue: “What are the social challenges which need to be addressed within these teams in order for them to be effective?” and “How can these teams go out into the environment and form collaborative links with other organisations?” I would now have to ask “What is meant here by effective?”. Companies can be effective in terms of short-term profitability without needing to attempt such a risky enterprise as a cross-organisational team.

Homo Oeconomicus has no desire for cooperation unless it is for selfish ends. Such effectiveness cannot last forever, of course: Our “more is better” epistemology can eventually end only in human misery. And *effectiveness* looks like a dangerously Newtonian word, resting on the assumption that cause and effect can be linked in the social world. Certainly behaviour will emerge in a team or group, but it will be unpredictable. The group’s level of co-operativeness will be inherently unpredictable.

So far, I have commented on some of the context-setting questions that framed my enquiry at the start of the research project. My frame has changed as the inquiry has evolved. I am now critical of the underlying assumptions about how we humans, in this culture, do business. I question the extent to which we can “manage” human action. This new frame forms a background which influences the focus of my inquiry. Of necessity, it does this subjectively and qualitatively.

So much for context. The research questions themselves are as follows:

1. How can groups of people work collaboratively together as cross-organisational teams when they have some shared interests and some differences?
2. How can sufficient trust be developed in order that collaboration might flourish?
3. How can the natural human tendency to apportion "blame" be addressed?
4. How can creativity be nurtured in such ambiguous circumstances?
5. How can the unavoidable realities of power and politics be addressed?
6. Will successful cross-organisational teams have a distinctive sub-culture?
7. What will be the distinctive subculture of cross-organisational teams?
8. Will there be a typical set of roles in a cross-organisational team?

I shall now address each of these questions in turn. Yet, as Wald observes above, the questions may be more important than the answers. Like Weisner, we might believe that these particular questions are of the class which "admit of insights, not answers". Perhaps the worst thing I could do would be to answer such important questions: These questions deserve something better than mere answers.

Intersubjectivity: The Core Question

Research Question 1: How can groups of people work collaboratively together as cross-organisational teams when they have some shared interests and some differences?

I see this question as key to all the other questions. It is both a philosophical question and a highly practical one: "All people have both interests and differences: How can they best work together?" It is a question which has vexed the world's religious scholars. My inquiry merely positions this challenge within the context of supply chains.

In my early work, I focused on the boundaries around organisations. It seemed that there might be something special about situations where these boundaries overlapped. An orthodox view, that of Lean Supply, is that there is waste, friction or noise at these boundaries, which should be removed. This view says that cooperation is a good way to do this: to do away with all the unnecessary posturing, haggling and cheating, for instance.

I don't see it quite that way any more. What is an organisation's boundary anyway? As William Blake said "Men see outlines and so they draw them" (Blake (1803)). Putting people inside organisational boundaries might sometimes be useful, but we can only do it metaphorically. We can, for instance, put that part of people which fits a particular economic model inside the boundary. We are then simply classifying people into sets on the basis of who pays their salary. We can't put the most important parts of them – their hopes, dreams, ideas, and stories - inside the boundary. The most human part has a free pass-out.

These boundaries are not only mutable but also hierarchical. When we draw a boundary we create a "part", separate from the "whole". A part is something incomplete, whilst a whole is something complete-in-itself, needing no further explanation; As Koestler (1967) points out, there are neither parts nor wholes in the living world. Our organisation-constructs are *holons*, having some of the characteristics of parts and some of the characteristics of wholes, arranged hierarchically, like Russian dolls.⁴

Yet even if these boundaries are merely constructs, there may be some magic in them. If a particular group of people holds a set of views, or context, then a second group will necessarily hold a different context, and where activity brings two contexts together, creativity may emerge. Koestler (1964) in a profound analysis, demonstrated that this process is essential to art, to humour and to wisdom.

He called this clash of context *bisociation*. This is a significantly different position from the orthodox view of inter-company cooperation and efficiency: It is organisation theory for the right hemisphere(s). Bisociation can be explosive, anarchic and unpredictable, like laughter or art. A different line of theory brings us to a similar view. If we take two organisations each to be complex adaptive systems, then a process of interaction between them can produce that class of emergence which Stewart (1997) calls *complicity*: a new pattern emerges which can not be predicted from the characteristics of the systems from which it emerged.

I now want to explore this metaphor of overlapping boundaries or frames in some detail: These boundaries might be metaphorical, but we humans can't help drawing them. There is something about this overlapping-zone, where frames cross in the living-world, which creates potential for new and astonishing patterns, and therefore relationships. This mysterious zone is a possible source of new insight in management theory. One variety of this overlapping-zone is what I referred to earlier as the quasi-firm⁵, the home of my proposed cross-organisational team.

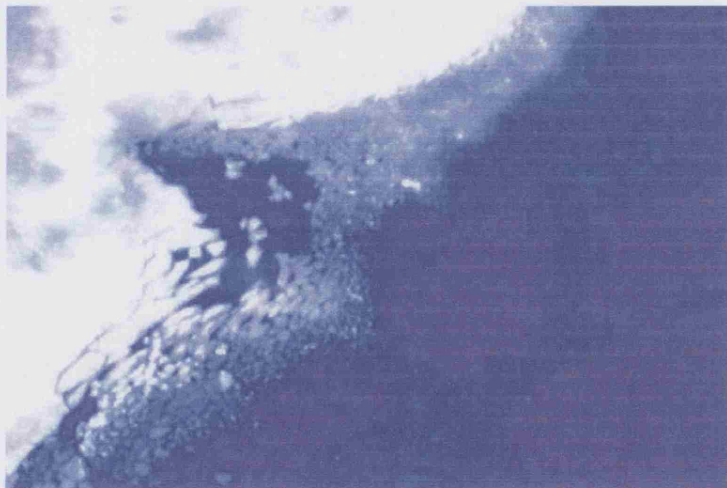
A property of the quasi-firm which merits further consideration is its *fractal* property.⁶

"Fractals...are non-Euclidian. They are broken, irregular, fragmented, grainy, ramified, strange, tangled, wrinkled. They extend over space, over time, or both."

"Before fractal geometry, the map showed the boundary between the ocean and the land as a smooth curve: a one-dimensional coast. But now... we may zoom in on the coast, and see that it has very small islands, even pebbles, in a densely packed structure. Zooming in again, we see grains of sand on the beach, and in the ocean close to the beach. All this is the coast: it has a fractal dimension. Land penetrates into the ocean in a frothy structure of sand, ocean penetrates into the land in a frothy structure of water in the wet sand. Not only is the coast a fractal... but it is a *fractal region*: the coastal zone. The ocean and land are not divided by the coast in a binary fashion: they interpenetrate in a fractal geometry. The fractals of chaos theory (attractors, separatrices, and bifurcations) are all of the sandy beach variety." (Abraham, 1993)

A visual example should assist. Consider the picture below of the edge of an ice flow in Fig(48):

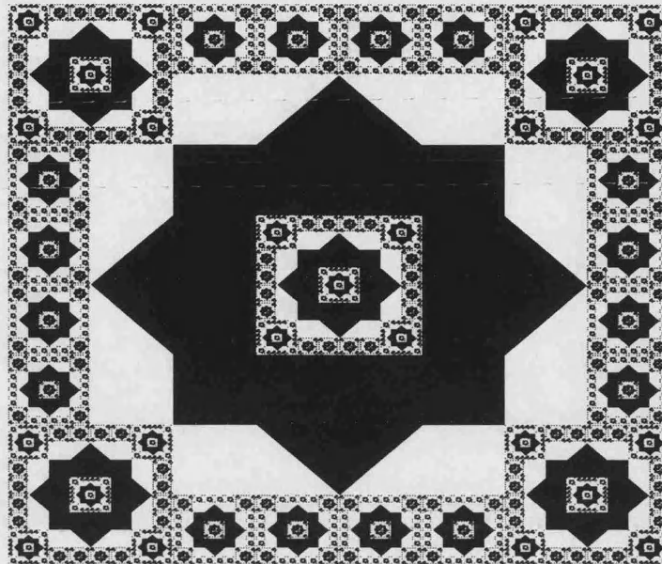
Fig (48) Example of a Fractal: Ice Flow



Where does the "ice" end, and the "water" begin? We can look at increasing levels of detail, but we will not be able to identify an "edge". It is a fractal-zone, where contexts overlap and interpenetrate. There are examples of these fractal zones throughout the natural world (a rainforest canopy is a spectacular example).

From African and Middle Eastern art to modern cities, humans are constantly creating fractals (Eglash (1999), Salinger (1997,2003)). An example is shown in Fig (49):

Fig (49) Fractal Properties of Arabesque Art



The pattern of social and political events, such as wars, show fractal properties in their timing across history (Brunk (2002)). Fractal properties emerge in the detail of human societies (Haraway (1991), Strathern (1994),⁷ Abraham (1993,1995)). Orsucci (2001) and Marks-Tarlow (2002) identify key applications of fractal concepts in psychology. The following from Marks-Tarlow is relevant to our inquiry:

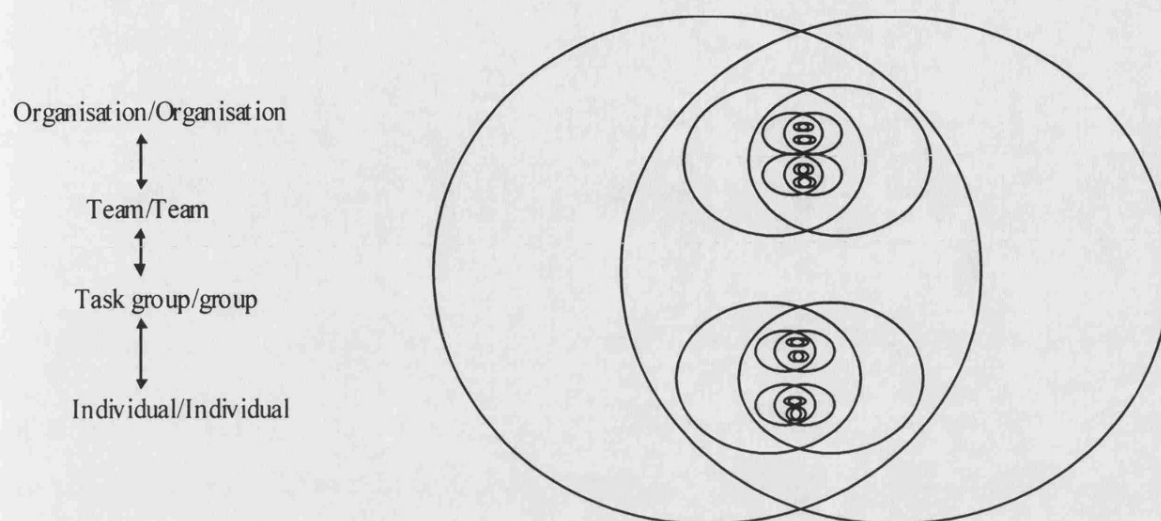
“I suggest that the self arises in the paradoxical space between people and events as an ongoing, co-creative, interactive and iterative process. Just as with any fractal, internal structure gets added or removed through the ongoing negotiation of boundaries. This complex border area, where inner and outer, self and other are melded, can be conceptualized in terms of *fractal separatrices*. The ordinary conception of a boundary is ...a... fixed area whose resolution is easily detectable, e.g., the door of our houses or edge of our desks. By contrast, fractal separatrices can never be resolved. Instead they form endless, infinitely complex zones of articulation and negotiation. Here, between any two points, e.g., of self and other, inside and outside, exist infinitely many other points.”⁸

“[Fractals] arise at the interface between processes, at boundary zones where they serve to both connect and separate multiple levels”^{9 10 11}

Pursuing this metaphor, we can apply the fractal concept to the quasi-firm concept.

We can consider the overlapping of two *constructs*, namely organisations, as shown in Fig (50), below:

Fig (50) Fractal Interpretation of Business Relationships



If we consider this overlapping-zone as a fractal-zone, like the sandy shore, we can reapply the language used by Marks-Tarlow in the quote above, in this new context:

“The *two organisations* are not divided by their boundaries in a binary fashion: they interpenetrate”
 “This complex border area, where the organisations are melded, can be conceptualized in terms of *fractal separatrixes*. [These] can never be resolved. Instead they form endless, infinitely complex zones of articulation and negotiation. Here, between any two points, e.g., of self and other, inside and outside, exist infinitely many other points.”

Hence, at one level we have a fractal zone of overlapping organisations. Within this, we can consider overlapping teams, and within the teams, overlapping subgroups, and so on. At each level these constructs interpenetrate.¹² Here, themes can be shared at different levels, and have different contexts depending on their levels. Meaning is being co-created, and influenced by the level of abstraction of metaphors applied in the dialectic. Conversations can have meaning in one or many of these overlapping-fractal-zones. Such a process of meaning-making is neither monolithic nor profligate, and is essentially paradoxical. Like the sea shore, the interaction will change temporally and be unpredictable in detail, yet because of our aesthetic, qualitative, subjective capacity we can not help but perceive patterns in it.

This *interpenetrative nature* of all our knowing goes to the core of this inquiry into how people can work together when they have some interests and some differences.

“To know anything, whether a person... or a process, entails... that the mind enters into what is known and unites with the spirit that informs and transforms it.” Owen Barfield (1986)

But how do we do this? Ziman (1978)¹³ offers some guidance:

“The very possibility of perceptual consensus depends upon a very ordinary faculty, shared by all human beings and many animals. Without conscious effort, we all have remarkable skill at recognising patterns.”

Such “intersubjective pattern recognition” he notes “strikes deeper at the roots of logicity in science than the positivists seem to realise.” Some narrow types of reasoning¹⁴ - may (barely) be possible without such pattern-awareness, but aesthetic or narrative knowing - from recognising a face to enjoying a story, to being part of a team - rests heavily on our

intersubjective, tacit knowing. We need the integrative capacity of mind to be social, participatory beings. “Uniting with the spirit” of the other, calls for more than our unacknowledged recognition of patterns; It also calls for a combination of *feeling* with knowing.¹⁵

An evolutionary perspective is useful here. Humans have evolved the greatest capability for independence/selfishness of all species on the planet, whilst retaining a capacity for extreme selflessness (Lumsden (1983)). Whether or not this selflessness is realised in practice is largely a matter not of our genetics but of our epistemology, and our epistemology is *socially* determined.

“Uniting with the spirit of the other”¹⁶ is closely related to the Greek *sympatheia*, meaning feeling-with: or Coleridge’s (1817) “imaginative union of the *percipi* and *percipere*”:

“The subject is personally affected by the other, and this brings with it the realization that he/she and the other are simultaneously essentially alike and fundamentally different. The other’s seemingly unfamiliar situation resonates with and speaks into vistas of the subjects own life.” Rosan (2003)

One might say this is a moment of pattern recognition of a fractal binary (Abraham, 1993). Widening the context somewhat:

“[Y]ou need insight into the radical interdependence of all phenomena... [T]o know that ... the line between good and evil runs through the landscape of every human heart. With insight into our profound interrelatedness, you know that actions taken with pure intent can have repercussions throughout the web of life.” Macy (1991)

Yet we should remember that feeling-with happens not only in rare and mystical moments, but also in the humdrum of our daily lives. We could not get through our lives without countless moments of feeling-with. Our social construction of meaning doesn’t work without this unacknowledged, everyday magic.

There are many terms used to describe this magic. My personal favourite is *intersubjectivity*. Reason (2003) focuses on participation. Martin Buber (1958) calls it “I-Thou”: those moments when one is truly there with another person, without pretence. Buber believed that you could not force such moments, that the best you could do was stay open to the possibility, but he did feel that aesthetic experience might open some doors. Others suggest routes toward enhanced intersubjectivity including the quality of conversation life (Stacey (2003)), free-flowing dialogue (Bohm (1987)), or positive reciprocity (Sahlins (1972)). Later in this Chapter I will offer my own suggestions of “integrative processes”.

So the integration of frames, bringing together of diverse groups, combinations of people from different organisations, might offer genuine potential for transformation, for surprise, for development. But this may be at great cost. The clash of frames is unpredictable: there may be an extinction event rather than a new idea.

As I said earlier, humans see outlines, including boundaries between self and other. Such a boundary is not a *Ding an Sich*: we draw it wherever our culture tells us to, as any anthropologist will attest. Achieving intersubjectivity, then, is a matter of where we imagine our fractal boundary:

“Care flows naturally if the “Self” is widened and deepened so that protection of free nature is felt and conceived as protection of ourselves... Just as we need no morals to make us breathe... [So] if your “self” in the wide sense embraces another being, you need no moral exhortation to show care... [Just as] you care for yourself without feeling any moral pressure to do it.” Naess (1988) in Seed et al (1988)

We have now considered briefly several descriptions of the phenomenon of feeling-with. Such intersubjectivity appears crucial both to our everyday coping and to human matters on a global scale.

Let us return to the research question: “All people have both interests and differences: How can they best work together?” As I have said, it is a pragmatic question, a question of *practice*. What *practices* might assist people in coping with the inescapably fractal nature of their relationships? In the remaining sections of this Chapter, I suggest some ways in which humans might improve the quality of their intersubjectivity.

Integrative Processes: Enhancing the fractal zone

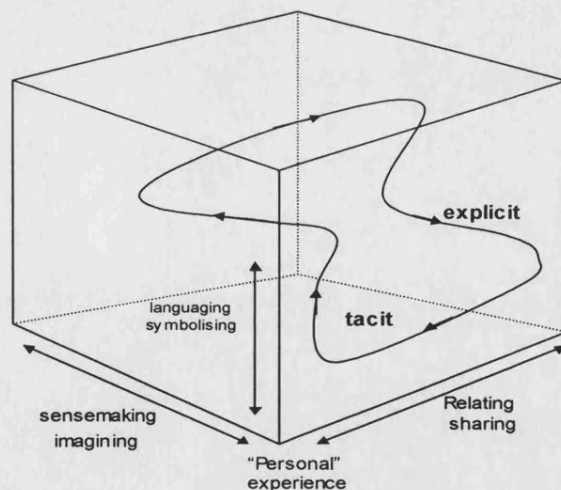
We should take stock for a moment.

We have asked: “All groups of people have both interests and differences: How can they best work together?”

I have suggested that a novel perspective on this question may be instructive: the idea of a *fractal boundary*. In the fractal boundary-zone, self and other interpenetrate on multiple levels and contexts. It is a paradoxical place, where contradictions co-exist. It is dynamic, living, moving. In human affairs, we have seen that such fractal interpenetration is sometimes referred to as *intersubjectivity*. Essential to this phenomenon is the human capability for *feeling-with* others. We cannot achieve meaningful participation or cooperation without feeling-with.

In Chapter 10, I introduced a model of the process of social sensemaking, which I called The Matrix. Here, I reintroduce it (Fig (51)) with the aim of exploring our current research question in more detail:

Fig (51) The Matrix



We now revisit the Matrix with the new question: How do we achieve intersubjectivity? Intersubjectivity is a weaving together of the tacit (our feeling-with, for instance) with the explicit (doing work in a social setting, for instance). The Matrix reminds us that this process combines a number of dimensions, from our ineffable (and fallible) ability to sense and respond to the feelings of another, to our imaginative and metaphorical participation (Coleridge’s “sympathetic imagination”), to our social acts of languaging (an intimate trophallaxis rather than “data” transmission).

How does this weaving-together of dimensions happen? Michael Polanyi has some interesting things to say about this process. His exploration rests on the concept of the *Integrative Act*. Imagine that you are looking at something to which a friend is pointing:

“There is a fundamental difference between the way we attend to the pointing finger and its object. We attend to the finger by *following its direction* in order to look at the object. The object is then *at the focus of our attention*, whereas the finger is not seen focally, *but as a pointer to the object*. This directive, or vectoral way of attending to the pointing finger, I shall call our *subsidiary awareness* of the finger. It is our subsidiary awareness of a thing which endows it with meaning: with a meaning which bears on an object of which we are focally aware. A meaningful relationship of a subsidiary to a focal is formed by the action of a person who integrates one with the other, and the relation persists by the fact that the person keeps up his integration.” Polanyi (1961) pp181-182 (emphasis in original).

This is a simple version of an integrative act. It becomes more interesting as the process is made iterative, however. For this we need the Polanyian notion of *indwelling*. We come to know some complex social phenomena, says Polanyi, not by studying them as detached objects, but by participating in the phenomena, *as if we already knew what they meant*.¹⁷ So an infant learns to speak by indwelling, i.e. by being immersed in the process of a language, until a wide set of apparently random elements come together to take on meaning which indwells in the child. Similarly, a musician might learn the fingering of the notes of a piece of music up until the point where the movement of the fingers and hands requires little or no attention, and the player can make the musical performance the focus of his/her awareness. And at some point, this in turn indwells in the player, who can now focus on the context of his/her performance within the rest of the orchestra, and yet again this process becomes integrated, so that the player now attends to the conductor.

This is a very different conception from the modernist idea of knowing:

“By placing the embodied activity at the centre.... [Polanyi] provides a way to connect the knowing agent and that which is to be known by simply denying the dichotomy before it gets off the ground... we are never shut up within our own minds as knowing agents, cut off from the social and physical worlds that surround us... we arrive on the scene already connected to and interacting with the environment. The capacities for relationship... are already in place. Moreover it is the body that serves as the pivot point of this interactive connection and this is precisely what has been left out of the modernist approach.” Gill (2000) p49

Such knowing is social, recursive and dialectical:

“It is helpful to think our relationship to the world as that of a dance, wherein we are inextricably connected to our dancing partner, reality, by means of our bodies, including language, and we are dancing in the dark. Thus although we cannot cognise our partner directly in and of itself, and thereby it remains somewhat mysterious and intractable, we can and do acquire knowledge of reality by means of our interactive dancing with it. Sometimes we can actually predict what it is going to do and sometimes not; at other times we can actually alter its behaviour and thereby contribute to the very character of reality. This ...eliminates the need for a way to bridge the subject-object gap... since it does not posit or require a gap in the first place.” Gill 2000 p50

In earlier chapters of this thesis, I highlighted some epistemological errors in our theories about supply chains. These included the following:

- Our orthodox economic position – the Economics of Flatland – starts from a conception of human knowing that is not consistent with a scientific understanding of human behaviour.¹⁸ Our orthodox position is explicit, propositional and based on a linear model of cause and effect. Our current supply chain theories follow this orthodoxy
- Our supply chain orthodoxy focuses on chains of objects: thingish-things. It assumes the rational pursuit of economic goals by individuals (actors) in the chain. It does not embrace the consequences of considering these chains as socially and dialogically constructed
- Our supply chain orthodoxy is a theory of less-than-fully-human participation in supply chains. It lacks context and perspective. It excludes the tacit and the aesthetic. It is a desiccated, soul-less, dehumanised model.
- Our current theoretical view of supply chains, necessarily and scientifically leaves them *devoid of wisdom*.

The consequences are dire. The more we dehumanise our supply chains, the more – through the double hermeneutic – we dehumanise ourselves. Increasingly, “Things are in the saddle and ride mankind”¹⁹ Thus, as Howard Barker says:

“We are reviving a medieval social theology in which human nature is decreed incurable corrupt in order to reconcile the poor with poverty, the sick with sickness and the whole [human species] with extinction.” Barker in Bloom (1997)²⁰

How can we get the wisdom back? I believe that Polanyi’s notion of the Integrative Act offers us some possibilities. The question, therefore, becomes “What particular integrative acts could improve the quality of our dialectic in the supply web?” or “How do we re-humanise our supply chains?”

Integrative Processes – Narrative and Ritual

Here I shall modify Polanyi’s terminology slightly, and talk of integrative *processes* rather than acts, since it is the pattern of interactions which “connects”. One such pattern is narrative.

We are born with an insatiable appetite for stories:

“The first sign that a baby is going to be a human being and not a noisy pet comes when he begins naming the world and demanding the stories that connect its parts. Once he knows the first of these he will instruct his teddy bear, enforce his world view on victims in the sandlot, tell himself stories of what he is doing as he plays, and forecast stories of what he will do when he grows up. He will keep track of the actions of others and relate deviations ... He will want a story at bedtime”
Morton (1984)

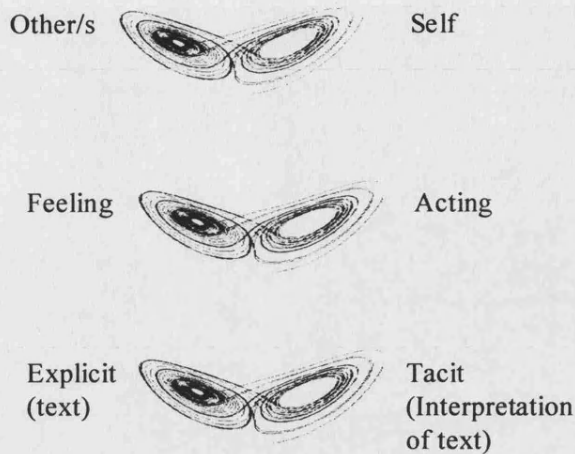
It is through narrative that we practice, and learn about, intersubjectivity (Carrithers (1992), Sarbin (1990), Stacey (2003))²¹. This continues throughout life: we deal with our experience by telling and listening to stories (Sarbin (1990)). It is through stories that humans have evolved to our current stage of social and genetic development. Without stories we would have no technological progress or, for that matter, religious faith. Nor history, since our histories are narratives. Further, much of our leisure and aesthetic pleasure comes from the joy of vicarious participation in narrative, through arts and media. Culture is a difficult word (even for anthropologists) but insofar as we can pin it down, it is to do with how we construct meaning through the stories we co-create.²²

What of narrative in organisational life? From the social constructionist perspective, we co-create our social realities through jointly produced narratives developed in a process of conversational turn-taking (Gergen (1996), Shotter, (1997), Stacey (2003)). Weick (1985 p127) points out that: “organisational life is *based on narration*”.^{23 24}

Why is narrative so essential to our being and knowing in the world? Narrative weaves together two domains, action and intention on the one hand, and consciousness and feeling on the other (Carrithers (1992)). Shotter (2001) presents the manager as a “practical author”, to which I would add a further emphasis on the aesthetic aspect of all narrative: making the manager not only practical author but also “bardic agent” (Lumsden (2003)).

Narrative, then, is an “integrative process”. But what is being integrated, and how?

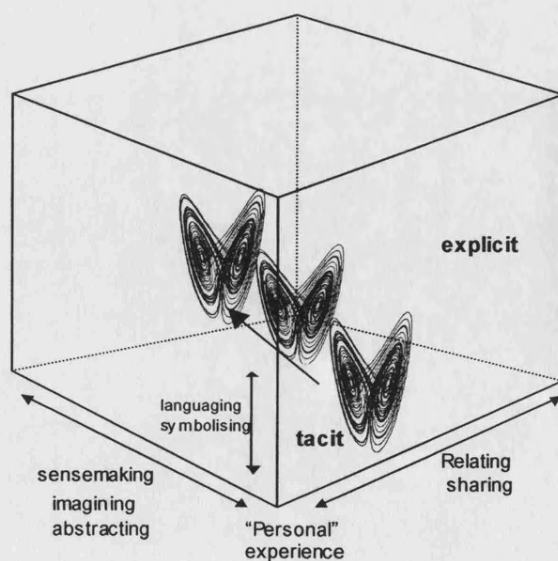
Stacey (2003) asserts that a co-created narrative is a complex responsive process of relating. I shall accept this assertion and explore it further. Metaphorically, we can imagine a narrative process as a strange attractor weaving unpredictably between poles of attraction: self and other, feeling and acting, tacit and explicit as shown in Fig (52):²⁵

Fig (52) Narrative Process as a Strange Attractor

Narrative is inherently fractal: stories contain sub-stories. It is also inherently paradoxical: no two interpretations (even if socially co-created) can ever be identical. Narrative takes us beyond the propositional, not only in terms of its ambiguity, but also in terms of the potential it offers for projection into an as-yet-unauthored future.

We can consider the narrative process as the vector in our model of The Matrix (Fig (51)). Co-created narrative provides the recursive process of sensemaking essential to our coping in the world. In narrating we attribute causes (perhaps often inaccurately), decide upon actions, make sense of lived experience and develop some degree of shared understanding or mutual feeling.

This is a cumulative process over time: successive layers of abstraction or metaphor are made possible, as each co-narration builds on the semiotic foundations of the last, in the same sense as Polanyi's indwelling. This is illustrate in Fig (53) below:

Fig (53) Narrative as Sensemaking

In the Tales (Chapter 8), we have seen many examples of narratives shaping the understanding of people in an organisation. In *They Hate Each Other* we see the often re-told story of antipathy between the DLO (Defence Logistics Organisation) and the DPA (Defence Procurement Agency). Whether this story started out “true” or became gradually more true in its re-telling we do not know, but the people who tell the story believe it to be “real”. In *Joe’s golf Clubs*, Joe’s story of how he decided to “buy holes” rather than buying drills, helps him to define his role in the organisation and his relationship with others.

In *Hot House Flowers* the report from Sea King Helicopters is a success story offering the potential rapidly to become an important myth....

Myth is a particular form of narrative which merits special attention. Myth exists across every group of living humans. In anthropological terms, a myth is a story that says something socially important, about the way things are – about ontology. Myths are sacred stories. Myths typically get embodied into rituals, social performances that are considered important. In our Tales from The Field in Chapter 8, we saw some contemporary rituals. There is always something tacit contained in rituals. They take their participants closer to the sacred. Our contemporary rituals point to things that cannot be challenged, that are too important to be desecrated.

And yet the rituals and narratives of our Field Tales, seem qualitatively different from those in other cultures. The rituals of “Naven” and the “Kula” support these peoples in their efforts to enhance intersubjectivity, to maintain a feeling-with others. Whereas, what is sacred in our own contemporary society seems rather unworthy: the pursuit of profit and personal gain, “objectivity” and “professionalism”.

Hence, we have the elaborate rituals of objective supplier selection such as those described in *Thanks anyway* and *Trafalgar Square*. The maintenance of social relationships is to some extent still sacred, but – at least in the few examples we have considered in detail - this operates in the shadow.

Integrative Processes – Dialogue

The terms “dialogue” and “dialogical” are used by a number of influential writers, with related but different meanings. I shall briefly clarify terms before moving on to apply the concept to the idea of integrative process.

Etymologically, dialogue alludes to the flow of meaning. Early application of the term appears in Socrates/Plato. In recent times, Bahktin’s development of the idea of dialogism has been influential:

“[H]owever much (an utterance) may concentrate on its own object, it cannot but be, in some measure, a response to what has been said about the given topic... The utterance is filled with dialogic overtones, and they must be taken into account in order to understand fully the style of the utterance...[O]ur thought itself is born and shaped out of the process of interaction and struggle with others’ thought...” Bahktin (1986) pp60-61.²⁶

A view of “reality” constructed from dialogical processes is explored by many, including Gergen (1996) and Shotter (2001).²⁷ Mainstream views of dialogue, including its application to organisational theory, envisage collaborative efforts to generate meaning:

“[T]he dialogical conception regards communication as a process in which participants work collaboratively to produce shared meanings” Krauss and Chiu (1998)

Whilst still focusing on the collaborative generation of meaning, Bohm’s work on dialogue is more radical. For Bohm, it is often *thought* that gets in the way of dialogue:

“For both rich and poor, life is dominated by an ever growing current of problems... the ultimate source of all these problems is thought itself, the very thing of which our civilisation is most proud, and therefore the one thing that is “hidden”, because of our failure seriously to engage with its actual working in our own individual lives and in society.” Bohm and Edwards (1991)

“...men and women are able to interact in many ways: they can sing, dance or play together with little difficulty but their ability to talk together about subjects that matter deeply to them seems invariably to lead to dispute, division and often to violence. In our view this points to a deep and pervasive defect in the process of human thought.” Bohm, Factor and Garrett (1991).

Bohm’s approach to dialogue is not as a term for something which naturally takes place, but rather as a design for a process which overcomes problems he sees with our “normal”, prejudiced thought: “What we need is a means by which we can slow down the process of thought in order to be able to observe it whilst it is actually occurring.” Bohm is looking for a more reflexive process of conversation, a conversation that is aware of itself and its preconceptions, which is at a higher state of consciousness.

In Bohm’s proposed dialogue there is no specific topic or objective for the conversation. People can speak about whatever they like, but should do so carefully and reflexively, and with great attention to what others are saying. Shared meaning eventually flows from this more generous form of being together, and the group becomes “coherent at the tacit level”.


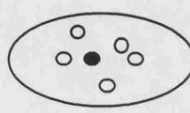
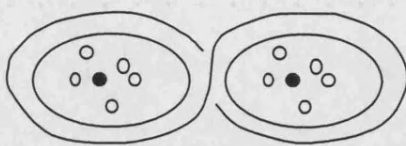
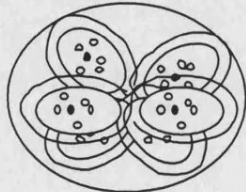
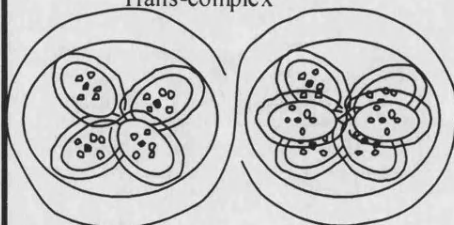
Bohm’s view of dialogue promises much but clearly presents difficulties of implementation in a workaday setting. It embraces a more participative world-view: indeed Bohm saw it as a way of addressing broad social problems, much like Reason’s Future Participation (Reason (1994a)).

Perhaps we can get close to the ambitions of a Bohmian dialogue in a business setting even if we have to stretch the rules somewhat. Shotter (2001), applying less stringent conditions, suggests (quoting Bahktin): “When people act in this way... in relation to each other, “a plurality of voices and consciousnesses... are combined but are not merged in the unity of the event” ”.

Let us remind ourselves of the task-at-hand. The challenge we are currently wrestling with is how we can re-humanise our supply chains, how we can increase the level of feeling-with others. Not for some trivial purpose such as increasing the next quarter’s profits in thrall to an insatiable stock market, but because unless we re-humanise our business lives we are consigned to meaningless commodity fetishism, wage slavery and eventual species extinction. This, to me, seems a good enough reason to search for some other “ways of being” at work, and improved qualities of dialogue may be part of this.


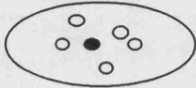
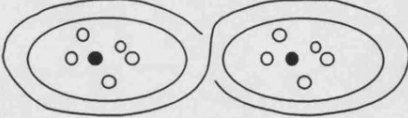
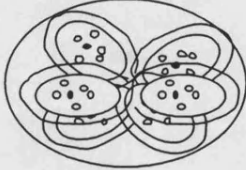
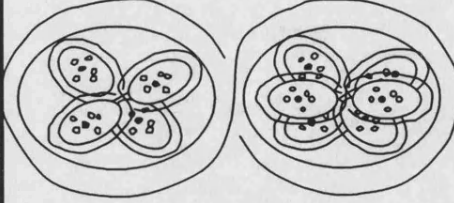
In this regard, Bohm’s identification of dialogue with levels of consciousness opens promising lines of inquiry. Dialogue weaves together self and other into an unpredictable attractor of sensemaking, changing the way we attend to the phenomenon of interaction. Such a process asks a lot of the participants. Kegan (1994) proposes a framework for stages in the development of orders of consciousness from a number of perspectives.²⁸ Fig (54) below, shows this from the interpersonal perspective. A successful dialogue as envisaged by Bohm or Shotter, would require a level of consciousness of at least 4 on this scale.

Fig (54) Five Orders of Consciousness: Interpersonal Perspective
 (from Kegan (1994))

	Subject	Object	Underlying Structure
1	Social Perceptions		Atomistic 
2	Point of View Role Concept Simple Reciprocity (tit for tat)	Social Perceptions	Durable Category 
	Mutuality/ Interpersonalism Role Consciousness Mutual Reciprocity	Point of View	Trans-categorical 
3. Traditional	Institution Relationship - Regulating Forms Multiple - Role Consciousness	Mutuality/ Interpersonalism	System/complex 
4. Modern	Inter-institutional Relationship between forms Interpenetrations of self and other	Institution Relationship - Regulating Forms	Trans-system Trans-complex 

Kegan's framework from a cognitive perspective is shown in Fig (55):

Fig (55) Five Orders of Consciousness: Cognitive Perspective from Kegan (1994)

	Subject	Object	Underlying Structure
1	Perceptions Fantasy	Movement	Atomistic 
2	Concrete <i>Actuality</i> Cause – and - effect	Perceptions	Durable Category 
3. Traditional	Abstractions <i>Ideality</i> Inference, generalisation, hypothesis, proposition, ideals, values	Concrete	Trans -categorical 
4. Modern	Abstract Systems <i>Ideology</i> Formulation, authorization, relations between abstractions	Abstractions	System/complex 
5. Post - Modern	Dialectical Trans - ideological Post- ideological Testing, formulation, Paradox, Contradiction, Oppositeness	Abstract System Ideology	Trans -system Trans -complex 

We can see here also that a level of development of a least 4, and more likely 5, would be necessary to support a Bohmian dialogue.²⁹ Nevertheless, it is important to stress two key elements of dialogue which are not emphasised in Kegan's model. Firstly, the model takes the perspective of the individual's development of consciousness, whereas Bohm's dialogue proposes a collective process. It may be that a group effort makes the outcome of awareness of one's own (and others') quality of participation more achievable.³⁰ Secondly, we have seen that the Bohmian approach emphasises the opportunity for greater "coherence at a tacit level". Kegan says little about the tacit or aesthetic dimensions of participation.

It will be obvious from the diagrams in Figs (54) and (55) that, just as in our considerations of the nature of the boundary-zone in an organisational dyad, or the fractal nature of narrative, we also have the same phenomenon emerging here in our considerations of dialogue. Both Bohm's theory of dialogic process and Kegan's model of ego development demonstrate *fractal properties* and the emergence of *ontological hierarchies*.

In our Tales from the Field, successful dialogue is often most conspicuous by its absence. Personal, confessional examples can be found in *Questions in Parliament* and *Out of line, pal*. Something slightly closer to the proposals of Bakhtin or Shotter can be found in *Hot House Flowers*.

Summarising this brief review of the potential of dialogue as an "integrative process" offering the opportunity to help in re-humanising our supply chains, we can see that

- Like narrative, dialogue builds on our capacity for sociality and enables us to weave together self and other, tacit and explicit, text and context.
- Dialogue also offers the opportunity for reflexive participation and heightened awareness: in Kegan's terms a different type of consciousness
- Dialogue, like narrative, is a complex responsive process with non-linear characteristics. Like narrative, it is also fractal (cf Kegan's model in Figs (54) and (55)). It also offers (at least potentially) the emergence of ontological hierarchies inherent in the process of interaction
- Hence dialogue is a "pattern which connects" and offers clues to *the* "pattern which connects".

Integrative Processes: Negotiation

Here we consider negotiation with a very specific objective. We have seen how the current meta-context of our organisational lives de-humanises us; it does this by contributing to tacit assumptions about human nature, which then become self-fulfilling prophecies. Hence, I ask the question "How can we re-humanise our supply chains?".

I have taken Polanyi's concept of the "integrative act", which he suggests is a key process through which we experience knowing in the world, and extended the concept to encompass a pattern of such integrative acts into an *Integrative Process*. An Integrative Process might allow us such an opportunity. Now I ask: Could negotiation be such an integrative process? Does it offer us the potential to re-enchant our supply chains?

There is a vast literature on the subject of negotiation. Here I present a selective view, limited to some key issues relevant to this specific inquiry.³¹ In particular, we are looking for ways in which negotiation could be a process which enhances intersubjectivity. A consideration of definitions proves enlightening:

Negotiate:

To transact business; to carry on trade *Webster's Revised Unabridged Dictionary, 1998*

To get past an obstacle or difficulty, *Chambers Etymological Dictionary*

This illustrates the breadth of meaning encompassed by negotiation. Dozens of definitions exist in the management literature. I offer the following composite definition, derived from earlier academic work:

“Negotiation is an interpersonal process between parties who have some shared interests and some differences. It involves information exchange and consequent learning, the generation and selection of options and establishment of a shared understanding.” (Based on Price (1988))³²

From a social constructivist position, all our knowing is *negotiated* knowing:

“[P]ractice is ultimately produced ... through the negotiation of meaning. The negotiation of meaning is an open process, with the constant potential for including new elements.” Wenger (1997)³³

And from the same position, the negotiation process is a sensemaking process:

“[A]ctors construct the interaction jointly, making sense of the negotiation as it evolves...” McGuin and Keros (2002)

Negotiation has an important role at the centre of human social activities. In our lives outside the business world, this process is tacit: we do not recognise these interactions as negotiations. From an anthropological perspective, when we carry out these processes in a business setting, they take a more formalised and ritual guise. We “label” sets of interactions as negotiations. The negotiation becomes a performance (Goffman (1959)). What is sacred in this ritual? Certainly not honesty, since: “lying and deceit are an integral part of effective negotiation” (Lewicki and Litterer 1985). Perhaps what has become sacred in our negotiations is the application of “market forces”, the contemporary magic of our business lives. Thus, we have to give a performance of applying the ruthlessness of the market: this is expected and legitimate. We can, and do, distort the market³⁴, but we do it in the shadow. In our legitimate discourse, if the sacred force of the market is served, then all is “fiyo” and the invisible hand will take care of us all.

Despite extensive academic work on negotiation, there seem to be some logical errors which are holding back progress. One of these is *dichotomania*. Researchers emphasise a distinction between cooperative and competitive negotiation (eg. Fisher and Ury (1993)). The competitive version is termed *distributive* negotiation, and is portrayed as bargaining over respective shares of a “fixed pie”; the cooperative version is termed *integrative* negotiation and is concerned with growing the “size of the pie”. This is clear example of inappropriate linear thinking. There can be no business competition without cooperation, and no business cooperation without competition. No arms-length bargaining is possible unless companies cooperate at least enough to carry out a trade. No inter-company cooperation (“partnership”) can allow an abdication of corporate governance; hence partners are still partially in competition. As Stacey puts it:

“Life in the universe – and life in organisations – arises from a dialectic between cooperation and competition, not from unconstrained competition! The implications are both profound and, of course, contentious.” Stacey (2003) p254

It is this dialectic which we are looking for in our Integrative Process view of negotiation. As we have seen in previous sections, we can best think of any relationship between organisations as a paradoxical and fractal zone. Cooperation and competition interpenetrate each other; there is no clear boundary between them.³⁵

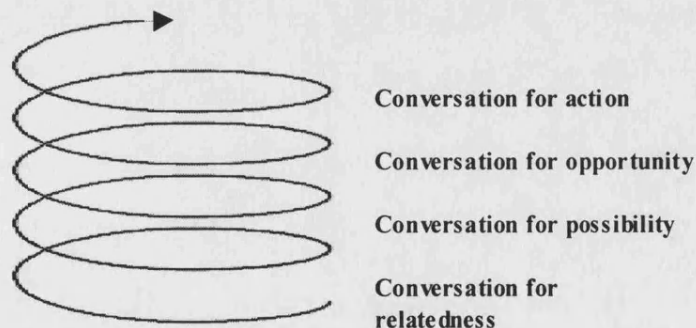
We should now focus on how negotiation can help us in our quest to re-enchant the supply chain. It is indeed possible to “grow the size of the pie”, but only through intersubjectivity: “Awareness of and attention to others is at the heart of social interaction, and interaction within... negotiations appears to be no exception... [A]ccording to this perspective, negotiations fail not because of cognitive limitations or a lack of information exchange but because the social relations between the parties break down” (McGuinnn and Keros op cit)

A view of negotiation as a fully-human process, requiring our capability for feeling-with, is a view of a fractal, non-linear, sensemaking process. We can think of the cooperative events as *dialogical*, but the overall journey is *dialectical*. Again, as in our other examples of Integrative Processes, we can see a paradoxical dance between self and other, feeling and acting, tacit and explicit. It would be wrong to expect most business negotiations to be successful dialectical processes: our prevailing business cosmology prevents it. However, there are some approaches which might help. I offer three tentative ideas below.

One approach which might help encourage a dialectical negotiation would be to construct the negotiation as a sequence of conversations, each from a different existential perspective, as outlined in Chapter Four. The diagram summarising this approach is repeated in Fig (56)

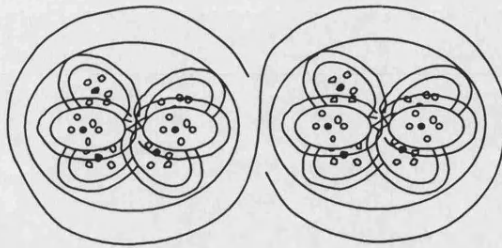
Fig (56)

Integrative Ontology



A second approach is suggested by work on *Conflict Transformation* (Burton (1997)). This is an attempt to work with an unfolding transformation and influence its evolution. It may include helping those involved in the process to understand what is going on in different ways (sensemaking). In order to achieve this, the dialectical process needs to move the participants beyond consideration of the specific issues of the dispute and toward reflection about the their own attitudes, perceptions and values in context.³⁶

It can be seen that these approaches to improving the dialectical quality of negotiation - enchanting the negotiation - share a common theme. As with our other Integrative Processes, they suggest the possibility of developing a different quality of consciousness of the situation: in Kegan’s terms an awareness of trans-system/trans-complex structures; a dialectical, interpersonal, intersubjective consciousness. Kegan’s diagrammatic representation of such a consciousness is repeated in Fig (57) below:

Fig (57) Trans-system/Trans-complex Structures (Kegan (1994))

This representation of negotiation entails the emergence of a hierarchical pattern – a spiral of Logical Types - from a complex process of interaction.³⁷

It is perhaps because of the challenging nature of such consciousness, that in many cases negotiations require the presence of a third party or mediator. It may be that a mediator helps reinforce the importance of the synchronic context of the process by representing what Mead (1934) called the “generalised other”.³⁸

Negotiation, done well, is embedded (Granovetter (2001)), it works *with* nonlinear processes rather than against them. It creates intersubjectivity through experiencing and practicing it. In supply chain theory, Carlise and Parker (1989) wanted to go “beyond negotiation”. Lamming (1996b) describes negotiation as part of the “mechanics of purchasing”. But negotiation is only mechanical if we treat it as mechanical (i.e. as a clash of levers or forces; bargaining rather than path-finding). I would argue that we should go *back* to negotiation, but to a participative and dialectical negotiation. In the 20th century, we disenchanting negotiation and turned it into a rational self-interested bargaining game. More appropriate, participative negotiation would require – above all – *learning about the other*.

We should pause here briefly to summarise. My first research question was:

“How can groups of people work collaboratively together as cross-organisational teams when they have some shared interests and some differences?”

We have spent some time considering this question, since it impinges upon many of the subsequent questions. I have taken the perspective that the question represents a search for *improved intersubjectivity*. Drawing on theoretical work in non-linear processes, social construction and postmodern epistemology, I have proposed three process which offer the potential for improved intersubjectivity: *Narrative and Ritual*; *Dialogue*, and *Negotiation*.

Bearing this in mind, we should now move on to consider the other research questions.

Research Question 2: How can sufficient trust be developed in order that cooperation might flourish?³⁹

My views on this matter have changed considerably during the course of the research. I shall consider the concepts introduced in the question, cooperation and trust, in some detail before drawing some tentative conclusions.

Dictionary definitions of cooperation and collaboration stress the idea of working together for a common purpose.⁴⁰ Interdependence is a common feature of the biological world, and is important to all theories of evolution (Taylor (1987) Bateson (1979), Maturana and Varela (1998)). In considering human cooperation, we need to put it into its proper context as a biological and evolutionary phenomenon: Humans are “obligately interdependent”, not only for the conduct of their daily lives but also for “the daily operation of their minds”⁴¹ (Caporalet (1997)). Further, we are obligately interdependent emotionally, since lack of such interaction is

dangerous to health (Maturana et al (1998)). The sacrifice of needs in the service of cooperation is part of the human condition. Two ways of sustaining cooperation have emerged repeatedly through history: The first is through recourse to a “superordinate goal” to which all subscribe. The second is the recognition of “common good/s” which all accept as such, and to which individual selfishness is subordinated. These ways of sustaining cooperation appear across all cultures in many guises, ranging from religious beliefs to legislation.

Wherever we see cooperation in the normal workaday of human cultures, we also see conflict and competition.⁴² This is logically unavoidable, since the very act of making a distinction, a “difference which makes a difference”, creates potential for conflict. Wherever individuals compete then they are also cooperating, at least insofar as they are cooperating by interacting in some way, however competitively.⁴³

Given this biological background, we should now briefly consider the phenomenon of cooperation in its business context.⁴⁴ As in human life in general, there is no “pure” cooperation or competition in buyer-supplier relationships. Even a single arms-length market transaction is a cooperative act, if only a momentary one. Where firms compete there is a strong likelihood that competition will be moderated in some way, by open or covert cooperation, either in terms of sharing of information, development costs or market research, collusion on management of the market, or the common situation of a multi-dimensional relationship where the two firms are not only competitors but also have a customer-supplier relationship:

“It is common for companies to have an overall idea of mutual interest whilst simultaneously being in conflict...”(Ford et al 1990 p387)

Several theorists have recommended an increase in the level of buyer-supplier cooperation, suggesting that this improves the financial performance of the partners. These include Macbeth and Ferguson (1994) and most of the output of the Partnership Sourcing/CBI body in the UK. Carlisle and Parker (1989) are particularly strident:

“Cooperation between industrial users and sellers is a far more powerful strategy for making them both more profitable in the long term than any adversarial approach yet devised”
Carlisle and Parker (1989) p5

This view remains contentious within management theory. Some claim there is insufficient evidence to support it (New (1994) New and Ramsay(1997), Ramsay (2001)). Others stress the potential benefits of cooperation without mandating it in every case. Lean Supply (Lamming 1993), for example, clearly implies a higher level of cooperation than currently exists in many companies.⁴⁵ Models of game theory developed from Axelrod (1984)⁴⁶ have been advanced by some as evidence of the superiority of cooperation as a business strategy (Carlise and Parker (1989)). However, as we saw earlier, there are serious problems in linking observations from such games to events in the business world (Binmore (1994))^{47 48}

Human cooperation, then, is a complex, emergent phenomenon It is best conceived as simply “working together”, and in this form it is closely related to Stacey’s complex processes of relating. It is qualitative rather than absolute. Cooperation is socially constructed and context dependent: action construed as cooperative in one social interaction can be construed as uncooperative in another.

Back to the question, and to the other key word: *trust*.

The meaning of trust is often treated as self-evident in the supply chain literature: There are few attempts to define or explore it. Consideration of wider academic literature reveals that it is a troublesome concept, the meaning of which is evolving.

Research on trust has been marked by conceptual confusion (Lewis and Weigert (1985)) and lack of conceptual development (Young and Wilkinson (1989))⁴⁹. In the attempt to operationalise trust in the pursuit of orthodox economics, a fragmented taxonomy has emerged (Sewell (2000))⁵⁰ leading to “semantic entropy” (Peters (1985)).⁵¹ Luhmann (1979)⁵² categorises trust into two phases: Premodern Trust and Modern Trust. Both premodern and modern trust continue to exist today, with modern trust having become increasingly dominant.

Premodern trust is in the interpersonal and affective dimension and is sometimes referred to as *horizontal* trust. This form of trust is closely related to *friendship* (Hawthorne 2000)⁵³. Here, one “not only thinks trust, but feels trust” (Fine & Holyfield (1996)p25)⁵⁴ Some psychologists describe the feeling as close to *love* (e.g. Gibb, JR (1979))⁵⁵. This form of trust requires belief:⁵⁶ Trusting is a leap of faith (Lascaux (2003))⁵⁷. Within this premodern context, trust is a superordinate goal encompassed by religious and/or cultural practices: interpersonal trust is *habitus*.⁵⁸ In this setting, a reputation for being trustworthy is highly socially valued: Trust is a moral obligation (Hardin (1998)).⁵⁹ In this sort of society, *guilt is an evolutionary asset* (Frank (1988)). Some fragments of this understanding of premodern trust survive in organisational theory: “[Trust is] the expectation of ethically justifiable behaviour” (Hosner (1995)p399)⁶⁰ but they are not in the mainstream.

Contrast this with Luhmann’s *modern trust*. This represents the *cognitivisation*⁶¹ of trust. With neoclassical economics comes an understanding of trust motivated by self-interest and functional interdependence; trust becomes a risk-related calculation. As Marx said “The basis of trust in economics is mistrust”⁶². Homo Oeconomicus is untrustworthy, and Williamson’s influential TCE requires us all to practice “self-interest seeking with guile”. Trust now becomes a matter of probabilities and predictabilities: Axelrod (1984) affirms that friendship is unnecessary for the evolution of cooperation. This view of trust is articulated well by Burt and Knez (1996 p70): “the issue isn’t moral... it is office politics.”⁶³

Let us now consider today’s increasing exhortations to trust from this context of the evolution of the meaning of trust. Trust, now, in its modern guise, becomes a mask (Sewell (2000)): “the rhetoric of trust [masks] the exercise of control under conditions of teamwork” and “the promiscuity with which trust is now bandied around suggests an overwhelming reaffirmation of the desire to control”. What Sewell is suggesting here is that the rhetoric of trust, and the associated emphasis on empowerment, are nothing more than a new discourse of control. The logic of his assertion is sound, since *in a modern context* anything other than an ironic interpretation of the renewed calls for trust would place us in a *double-bind*.

Modern trust also moves the emphasis away from the horizontal, interpersonal dimension of trust and toward vertical, inter-organisational “trust”. What we are left with is therefore an *ironic trust, between constructs*.

To recap briefly on this consideration of the concept on trust, trust is ultimately culturally determined and therefore needs to be described ethnographically rather than generalised (Lomnitz(2003))⁶⁴. Trust “cannot be induced at will” (Gambetta (2000)) but rather emerges somewhat unpredictably and with fragility out of human interactions.⁶⁵ Much research into trust has been reductionist, but “knowing the ingredients of trust does not give you the recipe” (Blomqvist (1997)). Trust is a relational phenomenon, always the outcome of a relationship and never of an individual alone.

Trust is qualitative and therefore not amenable to science *unless and until we develop a science of qualities*.

It is now time to bring these two concepts, trust and cooperation, together in order to address the research question. Table (11) summarises some features of cooperation and trust. Here we can see that both cooperation and trust may be paradoxical. By trusting, we could be performing a

leap of faith disguised as a rational calculative action, or exercising a calculative action disguised as a leap of faith. Even more likely, we may not be able to articulate our cooperative or trusting action rationally: it simply emerges from events without our conscious attention.

Table (11) Some Features of Cooperation and Trust

Cooperation	Trust
Requires shared interests	Requires shared interests (unless it is merely the potential to trust)
Positively reinforcing	Trust can only be reinforced by lack of disconfirming evidence Distrust is self-reinforcing
Qualitative	Qualitative
Paradoxical?	Paradoxical?
Cooperation can occur without trust	Trust can occur without cooperation (although with difficulty)
Qualitative	Qualitative

Since we now know that relationships between humans are creaturely, non-linear and emergent, we would not expect to find a linear, causal relationship between cooperation and trust. Trust and cooperation interact, but in complex ways. Cooperation can operate without trust: The mafia is a convincing example.

Seeing trust as a prerequisite for cooperation now seems to me to be inappropriate; putting the cart before the horse. No doubt trust and cooperation can be associated in human affairs, but trust as a precondition of cooperation is likely to be the exception. Trust, it seems, is more likely to emerge from cooperation, but unpredictably (Gambetta (1998)).

The most striking – and worrying – thing about the relationship between cooperation and trust is “*the fragility of trust in a disenchanted world*” (Gambetta(1998)). In the move from premodern to modern trust, we have disenchanted it. Premodern trust was (*is*, insofar as fragments of it remain) tacit and moral. What we knew about premodern trust was that you could trust trust.⁶⁶ Modern trust, in contrast, is the rationalisation of trust. We now distrust trust; or we trust it only ironically.

Bringing this consideration back to the interface between economics and supply chain theory, Sako (1992) identified three types of trust in buyer-supplier relationships:

Competence Trust: the ability of the parties to rely on the technical competence of the other.

Contract Trust: the ability of the parties to rely on each other to conform to agreed contract terms.

Goodwill Trust: the ability of the parties to expect each other to go beyond the strict terms of the contract and contribute more fully where there were opportunities to do so.

Premodern trust offers the possibility, though certainly no guarantee, of all three of these types of trust.

Modern trust, in contrast, with its emphasis on self-interest and guile, must keep its word only insofar as the contract is economically enforceable. Within our conventional economics, goodwill trust therefore has a little chance of seeing the light of day:

“[A]ll firms are snakes; they are maximisers and satisfiers concerned with their own survival and self interest. If that self interest is best served by working closely with another firm then they will do so. However, when that interest is no longer served, rest assured, they will bite you!” Cousins (2002)

Cousins is mistaken. Firms are not snakes. Firms are constructs imagined by humans. Humans can invent amoral and dangerous myths and become enslaved to them: we have done this through history, often with devastating consequences. The danger comes when we mistake our imaginary maps for the territory and end up dehumanising our lives as a result.

In the Field Tales, premodern trust is most evident in the shadow side of the organisations: For instance, the relationship between Chris and Ted in *Trafalgar Square* and the developing closeness of *The Morning After*. Modern trust is played openly “to the gallery” but is ironic, as shown, for example, by the conspirators in *Truth to Tell*, and by Joe’s conversation with his supplier in *Joe’s Golf Clubs*.

Certainly, then, we can play *language games of trust* within our legitimate discourse of rational self-interest. But genuine, fully-human trust and cooperation will remain hidden in the shadows so long as we pursue our free market hegemony in its current misguided form.

Research Question 3: How can the natural human tendency to apportion blame be addressed?

The question was included in the research because of Lean Supply’s call for a blame-free culture between buyers and suppliers (Lamming (2001)).⁶⁷

“Supply relations based on a blame and retaliation model are destructive and outmoded. If this model persists, then companies simply will not survive in dynamic markets. What we need are tough but sensible commercial relationships in which both purchaser and supplier knows what is required of them and responds accordingly.”

This argument is based on clear rational grounds. It sees blame and retaliation as unnecessary friction. Blaming, and the associated ritual shenanigans, adds cost without adding value.

We should dig a little deeper into this phenomenon of blaming from the perspective of this Thesis. We have seen that humans have to “make distinctions” in order to make sense of the world and cope in it. Throughout our evolution humans have joined groups. We cannot join groups without applying a process of categorisation, which then leads to stereotyping (Brown(2000)). Our self-worth becomes invested in our group (the in-group) and we stereotype those who are not-us. This self-fulfilling prophesy creates out-groups. The Trobriand Islanders, whom we met earlier, have two words for friend, which Malinowski translated as friends-within-the-barrier (kin) and friends-outside-the-barrier (non-kin).⁶⁸

The emergence of in-groups and out-groups is a bifurcation in a complex responsive process of relating. A relational feature of this emergence is blame. Bateson introduces relationship as emergence as follows:

“Relationship is not internal to the single person. It is nonsense to talk about dependency, aggressiveness or pride, and so on. All such words have their roots in what happens between persons, not in some something-or-other inside a person.” Bateson (1936)

This point applies equally to blame. Blame is not internal to the single person but emerges from a process of relating between persons. Since this process is complex and non-linear, it cannot be directed and controlled. We cannot eradicate blame simply by saying it is not good for business.

If we cannot eradicate blame, can we reduce it? In premodern societies, there are two importance processes which help to reduce blame. The first of these is ritual, which we have

already considered as an integrative process. The other is intermarriage between groups. In modern societies, we have largely closed the door to intermarriage as a supply chain strategy. Instead, the best we can do is improve the amount of face-to-face contact between the groups (i.e. buyers and suppliers) who may otherwise indulge in mutual blame. Research suggests that increased personal interaction reduces intergroup conflict (Brown(2000)). I would add that the *Integrative Processes* considered above (ritual, narrative, dialogue and negotiation) can assist in nurturing the quality of intersubjectivity, which may help to overcome in-group/out-group perceptions by moving the perceived “barrier” to encompass new intimates.

What of Lean Supply? Lean Supply’s call for the removal (or reduction) of blame is what the psychologists call a “superordinate goal” of the buyer-supplier relationship. In theory this approach should stand a good chance. As we saw earlier in our consideration of cooperation and competition, a superordinate goal can encourage cooperative behaviour. There is, however, a difficulty in making blame reduction a superordinate goal. The difficulty is that there is another set of social myths, at a higher level of logical type, which oppose blame-reduction. These are our overarching management theories. We have considered in detail some of the key beliefs of this overriding mythology:

- Humans are maximising and opportunistic
- Humans are economically rational within the constraints of the information available to them
- Humans are selfish and seek self-interest with guile

We must add the reminder that *Homo Oeconomicus cannot be trusted and has no history*.

We then have to ask the question: if these are overriding beliefs shaping every aspect of our culture, economy, even our legal system, then why would we subscribe to a blame-free relationship with our fellow humans? Indeed, since the UK has the second most litigious society in the world (after the US), it seems clear that we would face a double-bind were we to pursue the reduction of blame in business.

Let us assume, for the moment, that we accept the desirability of reducing blame between buyer and supplier.⁶⁹ There is then a consequence to be expected if we pursue the logic of blame reduction. Since removing blame would create a double-bind, it is likely that managers would participate in (quasi-legitimate) conversational themes of blame-reduction whilst moving themes of blame into the shadow. Some managers may have already taken this step. For example, the UK National Health Service has recently launched a campaign to become a blame-free culture, but nurses mistrust this move to the extent that they take out personal indemnity insurance.⁷⁰

Blame discourse has, to some extent, become political wordplay. We can see this by considering the dictionary definitions of blame:

Blame:⁷¹
 To hold responsible
 To attribute responsibility for
 Imputation of fault or guilt

Blame is not always to be avoided in a business context. Clare (2003)⁷² points to the extent to which, in our society, it seems that people who seem culpable for misdeeds often soldier on following the fudging of an inquiry or investigation. A blame-free culture can be distorted into a responsibility-free culture.

If there is to be a benefit from blame reduction, it is either in the removal of a *false* attribution of responsibility for a failure (which might be more simply expressed as *lying*), or in the association of a value-judgement with failure (implying that a buyer or supplier was acting

either unethically or incompetently). From this perspective, we can see that what is really being called for is improved intersubjectivity between buyers and suppliers, or what I have called the reenchantment of the supply chain.

Research Question 4: How can creativity be nurtured in such ambiguous circumstances?

Groucho Marx, writing to the humourist S J Perelman, on receiving a copy of Perelman's new book, *Dawn Ginsbergh's Revenge*: "From the moment I picked up your book until I laid it down, I was convulsed with laughter. Someday, I intend reading it."⁷³

Creativity is often considered narrowly in management theories, if at all. This is unfortunate, since it is of crucial importance to the survival of our species. Here, I want to consider creativity from a broad perspective before addressing the research question directly.

Groucho's quip, above, is illustrative. The first sentence begins innocuously enough with a standard, expected form of correspondence in a social situation. But the second sentence goes off in an unexpected direction: It is "an attack on reason", achieved by putting two ideas which are both perfectly normal and logical by themselves, into an unexpected juxtaposition (Grudin (1990) p211),

Earlier in this chapter, I introduced Koestler's theory of bisociation: "Bisociation means combining two hitherto unrelated... matrices in such a way that a new level is added to the hierarchy, which contains the previously separate structures as its members." (Koestler (1964)). In the case of humour, this process of combining matrices has a *self-assertive* emotional character: whilst our laughter may sometimes be at our own expense, it is more usually at someone else's. There is, therefore, both a logical and an emotional content to humour.

In contrast, we can consider artistic or aesthetic experience. Koestler notes that here also the bisociation of frames takes place, leading us to see things in a new light. But the emotional content differs from that of humour:

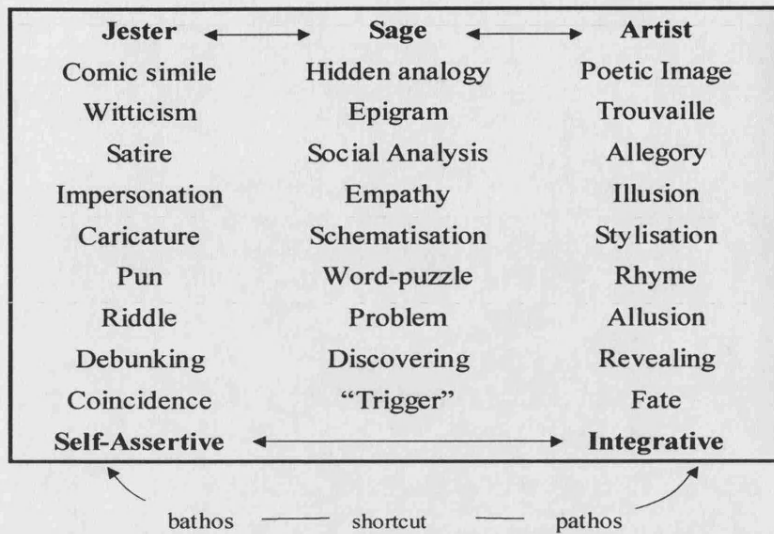
"The emotions which overflow in the *ah* reaction [of art] are the direct opposites of those exploded in the *aha* reaction of laughter. [In art, the emotions are] the *self-transcending* emotions, derived from the *integrative* tendency. They are epitomised in what Freud called the oceanic feeling: that expression of awareness which one experiences on occasion... when eternity is looking through the window of time and in which the self seems to dissolve like a grain of salt in hot water." Koestler (1967) p188

This state of self-transcendence points again towards the goal of my quest in this thesis: *intersubjectivity*.

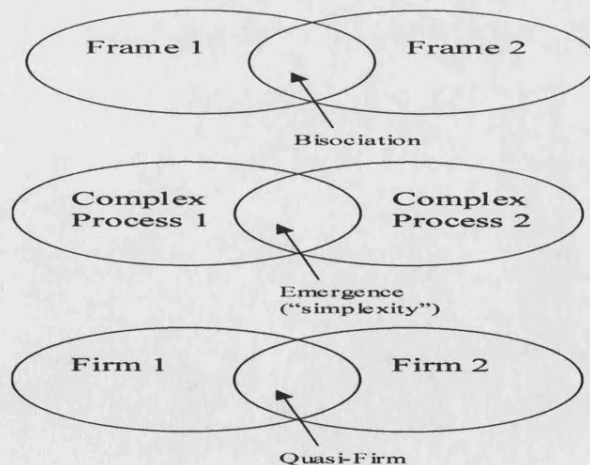
We have, so far, considered humour and art as forms of creativity. Between them, Koestler positions the creativity of *discovery*. Here again, bisociation is an essential element, but discovery is the domain of *the sage*, where self-assertion and self-transcendence coexist:

"The scientist's motivational drive is a blend of passions in which both the self-asserting and self-transcending tendencies participate – symbolised by the mad professor and benevolent magician of folklore." Koestler (1967) p267

Since our creative behaviour in organisations mirrors society, we see all these elements of creativity in our organisational lives. Koestler summarises his theory as show in Fig (58)

Fig (58) Koestler's Model of Creativity

From this standpoint, creativity is a clash of frames, or matrices, and a creative product or process is *emergent* from this clash. The implications of considering creativity from this perspective are profound. We can investigate this further by placing side by side, three phenomena which we have considered in this thesis: creativity as bisociation, emergence from complexity, and the Quasi-Firm. This is shown in Fig (59):

Fig (59) Bisociation, complexity and the quasi-firm

Here, I offer an assertion. These phenomena are not, I suggest, merely superficially similar, but are identical. In other words, creativity is not merely metaphorically similar to emergence: **creativity is emergence**. Some definitions of creativity will help to support this view, starting with a cognitive psychologist's definition:

“[Creativity is] the product of a thinking process that is, in some sense, novel and productive, in that it *goes beyond what has been previously known by an individual or group of people.*”⁷⁴ (Eysenck (2000), my emphasis)

Amabile offers the following:

“A product or response is creative to the extent that appropriate observers independently agree it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated” Amabile (1982)⁷⁵

Amabile refines the definition further:

“A product or response is creative to the extent that (a) it is novel and appropriate, useful, correct, valuable, to the task-at-hand and (b) the task is heuristic rather than algorithmic.” Amabile (1983b)⁷⁶

This clearly situates creativity as socially constructed: a result of a sensemaking process, situated and, in Granovetter’s sense, *embedded*.

Is defining creativity and emergence as being the same thing going to far? I suggest not. Sosa and Gero (2003)⁷⁷ take an approach to creativity which is informed by complexity theory:

“Methodologies should not commence with the notion of creativity as an individual cognitive faculty...rather, an appropriate methodological stance should provide access to a process by which... practitioners *become* creative by the confluence of their actions and the conditions and actions of the environment.”

“The unit of analysis proposed here for the study of creativity is ... the situation”⁷⁸

Referring back to our earlier explorations of complexity theory in Chapter 3, we can see that the type of emergence most likely to represent creativity is what Stewart (1997) calls *simplicity*, which results from the interaction of two or more complex processes. Amabile (1990) observes that “only the passage of time, and an eventual social consensus, can yield a proper assessment” of a creative act. In other words, emergence/creativity only makes sense in hindsight⁷⁹, which is why so many creative ideas seem obvious once they have emerged.

If creativity is emergence, we should expect it to be paradoxical. Some key theorists agree that it is. Csikszentmihalyi (1991) offers a detailed list of the paradoxes of creativity, whilst Peat highlights a particular paradox:

“At a deeper level [in creativity] order and chaos turn out to be not so much diametrically opposed forces as partners in a cosmic dance, a dance in which the one keeps changing into the other” Peat (2001) p58

Similarly, Wallas (1926)⁸⁰ and Plsek (1997), highlight the juxtaposition of analysis and imagination in creativity.

If creativity is emergence, we should expect it to be recursive. Koestler (1964) highlights the property of self-repair in human creativity (recalling Bateson’s image of mind as a self-healing tautology). Central to Koestler’s treatment of creativity is “*Reculer pour mieux sauter*”.⁸¹

If creativity is emergence, we should also expect it to be irreversible and destructive of what went before. We should expect it to elude conscious, rational explanations:

“To unlearn is more difficult than to learn; and it seems that the task of breaking up rigid... structures and reassembling them into a new synthesis cannot, as a rule, be performed in the full daylight of the conscious, rational mind. It can only be done by reverting to those more fluid, less committed and specialised forms of thinking which normally operate in the twilight zones of awareness.” Koestler (1967) p179

“[Creativity] must venture a step that is in opposition with the accepted notions of what is right. The concepts of right and wrong can turn out to be unreliable, especially when it is the case of too simple an identification of harmony in the search for reality. True originality can thus often be in opposition to the state of things... it can be in opposition with harmony and even reality.” Mrevlje (2004)⁸²

So at this point we have a thumbnail sketch of creativity. It is a form of emergence from a complex process of human relating. It is mysterious, having an important tacit and unconscious element. It has strong social and emotional elements. It is the paradoxical home of the jester, the sage and the artist.

When we take this human social phenomenon and situate it in the business world, we are taught to play a language game. We do not talk about creativity, but instead we use the term *innovation*. Innovation, we are taught, is the successful *application* of creativity (Kanter (1989, 2003), Von Stamm (2003)). Is innovation, then, also equivalent to emergence?

“[According to Schumpeter] novelty is a fundamental condition that evades a deterministic explanation...Schumpeter (Development (1932)) implies that novelty may be viewed as an emergent expression of the interactions among agents within the various domains of social life. This view is interesting because it bears remarkable resemblance to recent attempts to provide an explanation of the emergence of indeterministic outcomes within the broad confines of complexity research” Becker et al (2002)⁸³

This strongly suggests that emergence from complex process is related to the business phenomenon of innovation.

For the dominant management discourse, the acid test of successful creativity in the business domain is profitability. This introduces a further paradox. If innovation is creativity in service of profit, can it still be creativity? After all, creativity *per se* is *not* for profit: It is the search for thrills, for fun, for insight, for transcendence, or simply for its own sake.

Contrast what we have captured here as the essential features of creativity with what Claxton (1997) calls the *default mode of thinking* in a business context:

The default mode of thinking:

- Is more interested in finding answers than examining the question
- Treats perception as unproblematic
- Values explanation over observation
- Seeks and prefers clarity, and neither likes nor values confusion
- Relies on language that appears to be literal and explicit

Claxton continues:

“A culture that is critical and competitive, in which there are real social costs involved in voicing ideas that are unusual or which sound half-baked is a powerful suppressor of innovation.” Claxton p35 in Henry (2000)

Since a culture populated by Homo Oeconomicus has no option but to be competitive (both intra-and inter-organisationally), innovation becomes relegated to a second-rate, partially dehumanised form of creativity.⁸⁴

So, back to the question: How can creativity be nurtured in such ambiguous circumstances?⁸⁵

Well, I would argue that creativity is always going to have a hard time flourishing in large organisations such those in my Field Tales. Being creative does not flow naturally with one eye on the clock and the other on the budget. And if we widen our sights to the *interface* between organisations, then both the opportunities and the challenges increase. The opportunities increase because the clash of two organisational frames creates the possibility of emergence, whilst the challenges grow because inter-organisational cooperation goes against some of the most fundamental myths shaping our society.⁸⁶

If, as I have argued here, creativity is the domain of the jester, sage and artist⁸⁷, and playfulness is one of its most important qualities, then we must conclude that creativity will survive primarily in the shadow. Whether this creativity will, in practice, contribute to, or detract from, organisational profitability is a moot point. Whilst Stacey (2003) suggests that deviance contributes to organisational health, logic dictates that the deviant cannot do this consciously. Certainly my field tales suggest that much of what goes on between organisations takes place outside the legitimate domain.

Research Question 5: How can the unavoidable realities of power and politics be addressed?

Consideration of power in organisational theory typically involves a number of un-stated assumptions about the nature of power. Here, I outline some of the different theoretic approaches to power and then consider this within the context of the research question.

First, we have the idea of Power as Force. This is a consideration of power as it relates to “things”, to the world of *pleroma*. In science, power is a quantity not a quality, calculated as work/time, and having its heritage in the work of Newton and Watt. In the medium-range world we inhabit, between the limits of quantum theory and cosmology, power is simple to calculate and apply. It is causal: a given amount of power results in a predictable effect. It is also additive: more power produces greater effect. This view of power is only true in the physics of inanimate objects, it cannot be relied upon in the living world. However, a view of power as sheer force (of arms or armies) has sometimes been applied in the world of politics, for example by Machiavelli (1515).

A variation of this view is a view of Power as Strength, or potential force. An early proponent of this view was Thrasymachus of Chalcedon, c400 BC.⁸⁸, who believed that humans are motivated only by power, profit and possessions. The only measure of right or wrong (and of morality) is therefore what is deemed right or wrong by those in power. We can see a lineage from this view, through Adam Smith’s invisible hand to Darwin’s survival of the fittest⁸⁹. Contemporary political theory is much influenced by the concept of the “balance of power” between nations and this leads on to the amoral and competitive mindset of much contemporary management theory. Within this camp we can include the “Five Forces” of Porter, power as the management of meaning (Pettigrew (1977)) and “Power Regimes” in supply chain theory:

“[A]lthough power advantages might often not be explicitly exploited in buyer-supplier interactions, the very existence of a power imbalance conditions buyer and supplier behaviour”
Cox et al (2001c) p219⁹⁰

This theoretical position relies on the veracity of economic man, either as a universal or as a statistical majority. Neither has been demonstrated empirically.

The Power as Strength and Power as Force views have much in common. Power is still a “thing” which is possessed, in the former case by objects and in the latter case by people. Power as Strength fits also into the category of a *self-assertive* position: relative strength determines win or lose.

There is a third potential view of power. This is less conventional in relation to management theory but entirely plausible in relation to human history. This is the view of Power as Emergent Understanding. Talcott Parsons (1961) saw power not as a property of individuals but of systems, whilst Arendt (1969) is clear: “Power is never the property of an individual: it belongs to a group and remains in existence only so long as the group stays together”. Bateson, Foucault and Elias all saw power as an emergent property of relationship. Elias in particular saw power relations as co-created:

“individual minds are formed by power relationships while they are, at the same time, forming those relationships” (Stacey (2003) p323).

But what is the “power” that this theoretical position offers? We can easily recognise the power of force, and the power of strength (the threat of force) to enable us to bend someone to our will. What is the power of understanding? Paradoxically, the non-application of force carries tremendous power: A good example is Ghandi’s non-violent action for the independence of India. Millions of people with an emerging understanding of a situation can transform it, sometimes without either force or the threat of force. Another way of exploring this idea is to consider how each of these three forms of power would try to achieve peace in a political situation:

Power as force: If you want peace, prepare for war
 Power as strength: If you want peace, prepare for peace
 Power as emergent meaning: If you want peace, *be peace*⁹¹

The framework of approaches to power is summarised in Table (12) below:

Table (12) Theories of Power Summarised

Ple romatic Power Power as “Force”	Self-assertive Power Power as strength/law	Creatural/Integrative Power Power as emergent understanding
<i>Key Ideas</i>	<i>Key Ideas</i>	<i>Key Ideas</i>
Power in science/physics (Power=work/time) Power is the rate of delivery of energy Power is <i>causal</i> Power is <i>additive</i>	Self-help, survival of the fittest “Balance of power” (Political economy) Power as a quality of an individual person (e.g. Charismatic Leader) Relative power of companies (e.g. Porter’s five forces) Resources are scarce, hence resources = power Power as the “management of meaning” “Power Regimes”	Power is socially constructed Power is the property of a group, never of an individual Discourse, knowledge and power recursively co-construct each other Power as emergent understanding/intersubjectivity The “power of love” (Ghandi)
<i>Relevant Theorists</i>	<i>Relevant Theorists</i>	<i>Relevant Theorists</i>
Niccolo Machiavelli (1514)? Isaac Newton (1687)	Thrasymachus (c400 BC) Adam Smith (1776) Charles Darwin (1872) Thomas Hobbes Friedrich Nietzsche Max Weber Steven Lukes (1974) Domain of mainstream management theory	Talcott Parsons (1966) Gregory Bateson (1979) Hannah Arendt (1969) Norbert Elias (1998) Michel Foucault (1980) Mahatma Ghandi Martin Luther King Jr.

The integrative approach to power generates meaning that cannot be achieved through the other two means. Because of its dialectical nature, creative opportunities emerge. This opens the possibility of using integrative power for *renewal*: helping groups of people to understand situations in new ways or using new approaches. It also creates possibilities for *healing*: repairing the fragmentation of our relating – our loss of intersubjectivity – caused perhaps by the other two approaches to power.

We should now return to the research question. The question asked about how to deal the realities of power and politics, and specifically in relation to the interactions between buying and supplying organisations, and within that, particularly where these relationships were close.

I have outlined here an alternative view of power which sees it emerging from processes of group interaction: A fully-human, qualitative conception of power. From this perspective, the self-assertive injunction, from those in a position of “power” to those engaged in a cross-organisational team, to interact in a particular way, will have limited effect. Certainly, having been “empowered” (i.e. told to cooperate) team members may go through the motions of being a team. Yet, whilst it is in their nature to do as generations of their ancestors did, and genuinely feel-with their work colleagues, the prevailing social and theoretical milieu of our times may lead them to present themselves as supportive team players whilst they privately calculate the relative costs and benefits of authenticity versus guile.

Summary: A Common Theme - The Search for Improved Intersubjectivity

This chapter addressed the research questions against the background developed in the previous chapters, drawing on the experiences of the Field Tales. The claim that our supply chain theories contain epistemological flaws was explored further. I then critically reviewed my own research questions and found that these were also partially influenced by dubious assumptions.

A perspective of considering interactions between people as a *fractal zone* was introduced. The research questions were considered together:

1. How can groups of people work collaboratively together when they have some shared interests and some differences?
2. How can sufficient trust be developed in order that cooperation might flourish?
3. How can the natural human tendency to apportion blame be addressed?
4. How can creativity be nurtured in ambiguous circumstances?
5. How can the unavoidable realities of power and politics be addressed?

This suggested a common thread: *the search for enhanced intersubjectivity*. Improved mutual understanding must come not only from the rational perspective but also from qualitative and emotional experience. Three potential *Integrative Processes* were identified which could help in this quest: Narrative and Ritual; Dialogue, and Negotiation. None of these is new, of course. They have been around for two hundred thousand years. They have formed, and been formed by, our evolution. They are all complex processes of relating.⁹²

We face a major problem in any journey toward improved participation. This is our prevailing mythology about human nature, and hence our management theory. These avoid or deny the primacy of our subjective, tacit knowing

Finally, whilst we sometimes strive for an improved quality of participation at work, our overriding (and inaccurate) myths about human nature *in general* inhibit the quality of our participation *in the particular*: A classic *error of logical typing*.

Some loose ends remain. These will be picked up in Chapter 12.

Endnotes

- ¹ More specifically, I should say that economic man is not a “natural kind”. The idea that there are “natural kinds” in the world is a particular philosophical position. For more details see Lakoff and Johnson (1980) Lakoff (1986). Even if economic man were a natural kind, the theory would still be seriously flawed, since our current economic models cannot cope with information or other intangibles.
- ² Cited in Koestler (1967)
- ³ Morgan (1998)
- ⁴ Koestler (1967) p48
- ⁵ Quasi-integration first appears in Blois (1972) Quasi-firm first appears in Schumacher (1978)
- ⁶ The concept of fractals was introduced earlier. Here I will explore it in more detail, since it is of great importance to the research question:
- ⁷ Even the boundary between good and evil is described as fractal (McWhinney (1990))
- ⁸ This seems consistent with both Stacey’s ideas on Complex Responsive Processes and Reason’s call for participative inquiry
- ⁹ Jung (1952) presents the god Yaweh as a fractal binary in his interpretation of the Book of Job (Abraham (1995), Hiles (2001)). Taoist texts offer similar insights.
- ¹⁰ There has been relatively little published application of the phenomenon of fractals to management theory: Spivey (1997) applies a fractal framework but from a logical positivist paradigm; Mitleton-Kelly (1998) takes a strategic choice perspective.
- ¹¹ Stacey (2003) views chaos and complexity as applicable to business as metaphors; but the fractal is not much explored, even metaphorically. In contrast, others (e.g. The Complexity Research Programme at LSE) believe it is possible to study social systems as complex processes “in their own right”. At this stage in my inquiry, I stay open to the possibility of organisational phenomena displaying features of complexity in “their own right”, supported by the “noisy chaos” argument. (i.e a process can be partially deterministic and still be chaotic and complex.)
- ¹² A similar fractal pattern can be generated by consideration of inter-organisation processes as a pattern of conversational interactions or themes.
- ¹³ Ziman, (1978)
- ¹⁴ i.e. Propositional knowing
- ¹⁵ Although I would argue that we can never *know* unfeelingly, as our positivist paradigm seems to suggest.
- ¹⁶ Rather than self-aggrandisement through charitable acts
- ¹⁷ Gill (2000) p46
- ¹⁸ The traditional economics counter-argument, is that whilst what I am saying might be true of certain humans in particular, *in general* humans act rationally and selfishly. This, however, has firstly never been scientifically proven, and secondly, even if it was supported by statistical observations in our current culture, this could be evidence of the consequence of our dehumanising mythology rather than the ding an sich of human being.
- ¹⁹ Emerson (1899)
- ²⁰ Bloom (1997)
- ²¹ Sarbin (1986)
- ²² The fact that we are borne socially pre-wired for narrative is something of which we are rarely conscious. Nevertheless, our addiction to narrative exerts a huge influence on our understanding of the world. For example, we judge the “truthfulness” of an account based on its conformance to an unconscious model we hold of how a narrative should be structured: we will believe an untrue story provided it conforms to this structure (Bennett and Feldman (1981), Reconstructing Reality in the Courtroom).
- ²³ Eg Orr (1998)
- ²⁴ My italics
- ²⁵ I stress this is not presented as a positivist truth but as a means of exploring alternative understanding
- ²⁶ This clearly relates also to the ideas of G H Mead
- ²⁷ The idea of the “Dialogical Self” has emerged, building on these ideas (Hermans (1993)). This suggests that the phenomenon of the self is constituted out of a continuing dialogue: “It is only when an idea or thought is endowed with a voice and expressed as emanating from a personal position in relation to others that dialogical relations emerge”. Such dialogue can be internal and private, and when it is, it contributes to the phenomenon of self. In societies in which a relational construction of self is dominant, such as some Far Eastern societies, such a perspective is regarded as common sense rather than theory (see, for example, I Io (2001))
- ²⁸ Kegan (1994)
- ²⁹ Since Kegan calls the more advanced level dialectical, it is worth briefly contrasting this term with dialogical. Kegan is using dialectical in the sense introduced by Hegel, namely “the necessary emergence of higher and more adequate entities out of a conflict between their less developed and less adequate anticipations” (Encyclopaedia Britannica 2002)
- ³⁰ Perhaps Kegan’s perspective is culturally influenced, the USA being a highly individualistic culture
- ³¹ However, for those wishing to explore further, particularly useful references are Bazerman (2000) and Mestdagh Buclens (Undated)
- ³² I should stress that, since published definitions disagree, there are a set of definitions which are not compatible with the one I offer above. The incompatible definitions describe negotiation more narrowly, and in particular they exclude elements of the above definition. Hence, some writers (eg. Kennedy 1985, Rubin and Brown, 1975) do not recognise the process of learning. In contrast, the importance of learning as an element of negotiation is stressed particularly in anthropological studies of negotiation. As Gulliver (1979) suggests, it would be extremely helpful to limit the term *bargaining* to the narrower process of offer and counter-offer whilst ensuring that negotiation encompassed processes of learning and adjustment.
- ³³ And if practice is ultimately the result of the negotiation of meaning, then management is itself the “management of meaning” (Pettigrew (1977)) See also Lax and Sebenius (1986)
- ³⁴ There is a wealth of training available to managers to help them do this
- ³⁵ A further basic error of logic in the way that some academics look at negotiation is the tendency to describe it as a game. Game theory (Von Neumann) has been used to build models which help us learn about social phenomena: This is perfectly acceptable. The problem is that researchers often confuse map with territory. We then find reference to the “negotiation game” (e.g. Bazerman, 2000). This is logically incorrect. The use of negotiation simulations which assume the veracity of Homo Oeconomicus preclude learning, since “economic man has no history” (Boisot (1995)). If we wanted to learn about human love, for example, we would not construct a laboratory game, where the only freedom given to the players was whether to choose (during a particular round of the game) a red or green counter, yet business researchers try to study a negotiation, which is no less complex, no less tacit, no less creatureal, using such inappropriate devices.
- ³⁶ A third approach towards dialectic in negotiation would be to build on the theory of “The Third Side” being developed by Bill Ury at Harvard (Ury(2000)). Ury’s theory is that there is always a third side to a dyad. This consists of the people who are involved in one way or another with the negotiation: families, friends, other companies, even possibly the negotiators themselves from a different role perspective. These third-siders can influence how things develop by adopting various roles: provider, teacher, bridge-builder, mediator, arbiter, equaliser, healer, witness, referee, peacekeeper. This differs from the “conflict management” approach, since these are people with a vested interest, not uninvolved outsiders trying to mediate.
- ³⁷ Another example of a dialectical spiral emerging from a process of relating would be based on Reason’s model of cooperative inquiry. This can also be shown diagrammatically as a spiral of practice, experiential grounding, imaginative reflection and propositional knowing, within my proposed Matrix model of sensemaking. Lack of space prevents further explication here.
- ³⁸ For anthropological examples see Gulliver (1979) and for evidence of the strong influence of mediators – or even silent third parties – on negotiations see Rubin and Brown (1975).

³⁹ The question originally contained the word collaboration. This has negative connotations in some cultures, particularly France, and so I use cooperation throughout the rest of this section instead.

⁴⁰ Dictionary definitions of cooperation are very close to that of collaboration.

⁴¹ This is core to sociality theory and has been explained earlier in the thesis and so is not expanded here.

⁴² Competition is not really a logical opposite of cooperation so much as a difference of emphasis toward common goals. Conflict is semantically closer to the opposite of competition.

⁴³ I am referring to workaday social and commercial life here. The argument that a war is a form of cooperation would be *a reductio ad absurdum*, whilst a Victorian challenge to a pistol duel would not.

⁴⁴ An extension of this line of thinking is offered in Caporael (1997), who offers a theory of gene-culture evolution at (what I would call) nested, recursive levels of logical type. She uses the term “repeated assemblies” as the name of her theory. Her emergent ontological levels are the dyad (2 individuals: micro-coordination, mother/child), the work/family group (5: interaction, distributive cognition), the Deme (30: coordination, construction of reality/folk psychology) and the macro-Deme (to 300, seasonal gathering, stabilization of language). In a modern setting the (company) organisation might fit into this framework in some way.

⁴⁵ The IMP group (e.g. Ford et al 1990) emphasises cooperation as an element of an industrial relationship without insisting on any particular level of cooperation.

⁴⁶ Axelrod (1987)

⁴⁷ E.g. Binmore, K (1994) Also see Hoffman (2000)

⁴⁸ Axelrod himself has never made such claims; his interest is in exploring the conditions under which cooperation evolves.

⁴⁹ Lewis and Weigert (1985), Young and Wilkinson (1989)

⁵⁰ Sewell (2000)

⁵¹ Peters (1985)

⁵² Luhmann (1979)

⁵³ Hawthorne (2000)

⁵⁴ Fine, Holyfield (1996)

⁵⁵ Gibb, JR (1979)

⁵⁶ Trust shares etymological roots with faith (*federe*)

⁵⁷ Lascaux (2003)

⁵⁸ Misztal, (1996)

⁵⁹ Jardin, Russell (1998).

⁶⁰ Hosner, JT (1995)

⁶¹ My term, not Luhmann’s. But I think it is what he was getting at.

⁶² Marx, Engels (1844/1975)

⁶³ Burt, Kncz (1996)

⁶⁴ Lomnitz, Scheinbaum, (2003)

⁶⁵ “Modern trust” perhaps can be induced at will: at least in an economist. Assuming the economist is not fully-human.

⁶⁶ I am aware of the danger of romanticising the past, and I do not want to do that here. I am not suggesting life was wonderful in pre-modern times. I am, however, lamenting the modern reduction of trust into something less than fully human.

⁶⁷ From Bosch inaugural speech at the University of Glamorgan, 2001

⁶⁸ Wright (1994) p182

⁶⁹ This was my own assumption at the start of the research project. I now think that is more important to address issues of a higher logical type,

⁷⁰ Nursing Standard, Jan 2nd 2003, Royal College of Nursing

⁷¹ From Dictionary.com and Chambers Etymological

⁷² Clare, G (2000)

⁷³ Quoted in Grudin (1990) p208

⁷⁴ Eysenck and Keane (2000) p529

⁷⁵ Amabile, (1982)

⁷⁶ Amabile (1983)

⁷⁷ Sosa and Gero (2003)

⁷⁸ And the situation in turn is defined by Sosa and Gero in terms of the interaction of individual and environment/group. So in this case the individual is the singular and the group the plural of the same phenomenon: a creative situation.

⁷⁹ I should remind the reader that whilst I recognise that “pure” theoretical mathematical complexity is entirely deterministic, I have expressed the view that “noisy chaos” describes processes that are merely partially deterministic and yet still demonstrate emergence. I see this view as consistent with the views of a number of other established theorists in the developing domain including Stewart (1997), Cohen and Stewart (1994), Abraham (1993,1995) and Goodwin (2000a,b)

⁸⁰ Wallas (1926) Summarises much previous thought in a classic text.

⁸¹ The vast majority of current theories of creativity describe it as a repeated cyclical process.

⁸² Mrevljc (2004)

⁸³ Becker, Eslineger, Hedtke, Knudsen, (2002)

⁸⁴ I accept, of course, that the writer, the playwright and the novelist take their work to market just like Adam’s Smith’s butcher and baker. But the more their needs to maximise their returns rule the pace and focus of their work, the less their work is likely to be truly creative

⁸⁵ The element of ambiguity which I allude to in this question was originally seen (by me) as a potential barrier to creativity. I now realise that ambiguity is more likely to be a catalyst for innovation, for the reasons outlined in this section.

⁸⁶ As explained in detail elsewhere.

⁸⁷ It is worth noting that these roles point back- yet again – to a certain level of consciousness necessary to appreciate complexity whilst at the same time participating in it.

⁸⁸ Thrasymachus’s views have reached us via Plato.

⁸⁹ Darwin was influenced by Smith. As previously mentioned, Darwin borrowed the survival of the fittest term from Spenser.

⁹⁰ Cox, Sanderson and Watson (2001,c)

⁹¹ The framework of types of power is my own, but this example is from www.mkgandhi.org/Gandhi'sJournal/april_article1.htm

⁹² For a relevant discussion of intersubjectivity from the perspective of Group Psychology, see Schulte (2000), who draws on Foulkes’ concept of the Group Matrix: “The matrix can be described as the slowly developing common pool of feelings, experiences, ideas, transactions, stories, images, metaphors, dreams and associations in the life of a group that forms the shared set of references and points of contact between the group members. They are the phenomena through which the multiple subjectivities of the group intersect, and which thus provide the ground of intersubjectivity in the group.”

CHAPTER TWELVE: CONCLUSIONS AND POTENTIAL IMPLICATIONS

Mornington Crescent

“It takes many years of training to ignore the obvious.” The Economist, Theories of Economic Growth¹

I have played the role of heretic in this Thesis, but a well-meaning one. I am saddened by the poor quality of the relationship between business and humanity

Consistent with my heretical stance, I offer an analogy between management or management theory, and Mornington Crescent: Management Theory is like Mornington Crescent.

Readers may be familiar with Mornington Crescent. It is a game played in a long-running radio programme called “I’m sorry, I haven’t a clue”. It is, in essence, an ironic joke that has been replayed weekly for thirty years and still raises a laugh from the audience. The players in the game take turns to name London underground stations. The winner is the player who is able to say “Mornington Crescent”. The players take the game “seriously”. Various obscure references are made to protocols and precedents, which are sometimes debated passionately, but the rules have never been explained to the audience. We suspect there are no rules. Our amusement comes from hearing a group of people pretending an intimate understanding of what is required, giving brilliant performances of knowledge, skill, insouciance, outrage or whatever, whilst we all share the secret that nobody has a clue what is going on.

As a radio programme, this is just a bit of harmless fun, but I suspect that management theory is closer to Mornington Crescent than we would normally admit.

Consider “strategy”, for instance. Managers spend a lot of time and money developing strategies, sometimes supported by academics or consultants. Yet often we cannot demonstrate a link between this strategy-making and later events (Whittington (1993), Stacey (2003)). The same is true of culture change programmes, business process reengineering, information technology projects, mission and value statements, corporate image development - a wide range of management activity. There is no right way of doing these things. What we do have, however, is a baroque and constantly changing lexicon (some of it from academics) and a large number of executives who need to produce convincing performances in these rituals.

If management, and management theory, resemble Mornington Crescent, then we should expect to see narrative as an important part of how managers go about their work. If they often do not know what is going on; if they are often “hanging on for dear life”; and if the outcomes are often as much a surprise to them as to everyone else, then what becomes important for managers’ careers is their ability to construct a story about how they were a key player in a success or an innocent casualty of a failure. All couched, of course, in culturally appropriate “team player” language. Such narratives become convincing if their mythology is consistent with mythology of a higher logical type – our taken-for-granted business epistemology. From this perspective, insofar as managers draw on management theory at all, it is to legitimise their narratives.²

Since there are no “rules”, managers make them up as they go along, partly informed by tacit cues generated from interactions with others. This then forms a background of unspoken “Trusels”, such as those outlined in Chapter 3. Most managers probably believe market forces are a “good thing”, for example, but relatively few will have spent any time critically examining this assumption. Surrounded those who appear to believe fervently, many simply go with the flow.

For the same reason, managers behave as if they, and others, make decisions which are economically rational. They also assume (at first literally, and later ironically) that if they are good managers, then they should be able to have an impact on the profits and success of their company. As they progress through their careers, managers learn that these rules are only part of the story. These tacit beliefs, combined with qualitative skills of performance and presentation, represent the public face of business life. Behind the scenes, they also learn to put a positive spin on bad news, and to walk in the grey area between what is “right” and “wrong”.

I am not offering a cynical view here. Rather, I am trying to be honest about the qualitative, participative nature of management practice. And about the rather poor quality of participation which our culture expects of us.

The rapid development of technology creates opportunities for big profits to be made and selectively distributed. Yet there are valid concerns that our ability to exploit our biosphere could lead us to destroy it: ³

“Today, the survival of humanity basically no longer depends on man’s adaptation to the environment within which we have existed for millennia, and with which we have learned to coexist. Rather it depends on whether we can modify our ideas and thinking, our social and political organisation, to adapt them to the world we ourselves have brought into existence.” Havas (1994)

Within this sorry state of affairs, it seems that most management theory offers managers nothing more than tools to help humanity dig its own grave. Few influential texts raise issues of ethics or morality. Most are value-free. Amoral, like the classical physics to which they aspire. Imposing causal, pleromatic logic on the living world devalues it, and us:

“The more man becomes able to manipulate the world to his advantage, the less he can perceive any meaning in it” Barfield (1977)

“The devaluation of the human world increases in direct relation to the increase in the value of things” Marx (1844)

The management version of Mornington Crescent therefore has a darker side:

“They are playing a game.
They are playing at not playing a game.
If I show them I see they are, I shall break the rules
and they will punish me.
I must play their game of not seeing I see the game”
RD Laing, Knots, (1972)

Hence, as Murray Gell-Mann said, a modern (management) education is like going to the best restaurant in the world and being given the menu to eat.⁴

There is an alternative:

“It seems possible that a mode of knowing that emphasises a certain sacredness to the organisation of the biological world might be, in some sense, more accurate and more appropriate to decision making.” Bateson (1987)

We would do well to remember in reading this sound advice, that we humans *are part of* the biological world. We do have a choice. “Business” is nothing more than a set of concepts we have evolved. In doing so, I believe we have got our epistemology in a muddle. With some effort we could achieve a more productive and healthy way of knowing. This would involve recognising that:

- More of something is not always better (food, money, power, speed)
- Quality is more deeply human than quantity
- Sometimes it is best not to think in terms of cause and effect, but rather to leave the (perceived) cause where it is and find a way to move forward

A management theory based on this thinking asks: “How can we make organisations fit for humans, rather than humans fit for organisations?” (Handy (1998)).

This has profound implications for management research and teaching:

“Soren Kierkegaard said that any religion that could be justified by its consequences was hardly a religion. We can say the same thing about management education and scholarship. They only become truly worthy of their names when they are embraced as arbitrary matters of faith, not as matters of usefulness. Higher education is a vision, not a calculation. It is a commitment, not a choice. Students are not customers; they are acolytes. Teaching is not a job; it is a sacrament. Research is not an investment; it is a testament. ... To sustain the temple of education, we probably need to... restore it to those who read books not because they are relevant to their jobs but because they are not, who do research not in order to secure their reputations... but in order to honour scholarship, and who are committed to sustaining an institution of learning as an object of beauty and an affirmation of humanity.” March in Van de Ven (1997)

Re-enchanting the Supply Chain

“Work is love made visible”: Kahlil Gibran, The Prophet

I have left three of my research questions unaddressed.

These are:

Research Question 6:

Will successful cross-organisational teams have a distinctive type of sub-culture?

Research Question 7:

What will be the distinctive features of such a sub-culture?

Research Question 8:

Will there be a typical set of roles in such teams?

These issues have been alluded to tacitly, but I will now address them explicitly although, as we have seen, this is always an imperfect process: by making an idea “clearer” we always lose some of its value.

I consider that cross-organisational teams – people truly acting as a single team across organisational boundaries – will continue to be relatively rare. Our ruling epistemology means that the odds are stacked against cooperation. On the one hand, as Ken Ohmaie said, in a difficult world it is best not to go it alone (Ohmaie (1989)). Yet on the other hand, our acquisitive and individualistic society suggests that this is exactly what we should do. A genuinely participative world, as envisioned by Reason (2001), with the qualities of conversational life proposed by Stacey (2003), and the thirst for collaboration between companies suggested by Lamming (1993,2001) would be an exciting and better place: The possibilities for the continued existence of Homo Sapiens are enhanced by an improved dialectic between Reciprocans and Oeconomicus.

Yet to succeed in such an enterprise, we must do it for the right reasons. To do this in the name of profit improvement would be an error of logical typing. We must do it in the name of humanity.

Sadly, such debate as currently exists on the nature of humankind seems to be pushing us in the other direction: Homo Oeconomicus is “The end of history” (Fukuyama (1995)). Our supply chains are the inventions of “occidental industrialists and engineers” (Bateson). We seem to be trapped in a “glass bead game” (Hesse (1943)). This state of affairs should fill us with foreboding.

Not only will the cross-organisational team be rare, therefore, but it will also be – to borrow a term from Gibbs (1999) - ephemeral. The most likely environment for such a team would be project-specific, with a lifetime of one or two years, as suggested by Hall (1999). For as long as our prevailing culture fails to recognise the epistemological need for participative cooperation, such teams can only be sustained by the specific relationships of the particular individuals involved. Career paths and organisation changes, amongst other things, would tend to pull the relationships apart.

Accepting that cross-organisational teams will be rare and ephemeral, will they have a distinctive sub-culture? Early in my research, I considered this from the perspective of organisational roles and sub-cultures. Reflecting on this now, I can see that my hypotheses⁵ pointed toward a single theme: *plurality*. My early models, from 1995, encompassed every conceivable sub-culture and role, and suggested that all of these were necessary for innovation, learning and cooperation in organisations. My later ideas (1998 onward) shifted the focus to the process of interaction; to a conversational dialectic of sensemaking. It now seems clear to me that the plurality is of little use without the dialectic, and the dialectic is of little use without the plurality. Within the plurality, I have come to recognise more fully the importance of some of the strange-sounding roles I envisaged so long ago: those of professor, witch-doctor and anthropologist. Fisher, Rooke and Torbert (2001) have other names for these roles: witch, clown, magician and ironist.⁶ Commons and Richards (2002) describe “four postformal stages” of human development which encompass such perspectives. Whatever names we give to these roles, they encompass a different way of being and knowing: a more reflexive, dialectical consciousness. Through the journey of my life and this research, I have increasingly found myself in this ineffable domain, needing to let go of the quest for mastery and accept – even enjoy – mystery.

So whilst I would expect to see a full range of subcultures and roles in these ephemeral teams, I attach particular importance to the post-formal roles. Such roles focus on the qualitative life around them; they appreciate not only the context of events but also the context of contexts. A team can be clever without them, but only with them can it be *wise*. Perhaps this is what this CEO from a large plc is attempting:

”The only thing I do is lead conversations.
Any group is a network of conversations.
I continuously thrust people into
situations that force them to challenge the
current conversation they're holding,
to get beyond that discussion to one
that's more productive”⁷

With the plurality of roles we need a plurality of (dialectical) processes. These should include narrative, ritual, dialogue and negotiation. Since these processes exist already in our social and business lives, it is the nature of their qualities and themes that might help us toward improved cooperation. My own (deeply personal) understanding of such dialectical processes encompasses the recognition of a sequence of logical types which emerges from them.

Further, there is the issue of the legitimate and the shadow. Whilst I assert that authentic participation remains inhibited in the legitimate domains of organisational life, it may occasionally flourish in the deviant underworld. Researching the shadow side of organisations calls for different approaches and interpretations, as I have tried to demonstrate in this Thesis. Participating and surviving in it may require a more reflexive consciousness.

I have saved the most important point until last. What matters above all in building cooperative teams is intersubjectivity. Yet true intersubjectivity cannot be dispassionate. And if it cannot be dispassionate, then it cannot be entirely rational. Nor can it be amoral:

“The basis of ethics consists in one individual recognising in another his own self, his own true inner nature.” Schopenhauer (1840) p209

and:

“Knowledge of one subject by another is love” Eckman (1986)

Love is the most powerful corrective to our over-purposive epistemology:

”It is appropriate to mention some of the factors which may act as correctives: areas of human action which are not limited by the narrow distortions of coupling through conscious purpose and where wisdom can obtain. Of these, undoubtedly the most important is love.” Bateson (1973) p421

It is only a short step from this recognition to another one: If we define inter-firm cooperation though a creaturely, fully human, frame, then we also define *love*.⁸

“Love ... could be spelled out as: I regard myself as a system ... and I accept with positive valuation the fact that I am one, preferring to be one rather than fall to pieces and die; and I regard the person whom I love as systemic, and I regard my system and his or her system as together constituting a larger system with some degree of conformability within itself.” Bateson (1984) p230

I recognise that the points I am making do not sit well with our orthodox theory. This is only because we have spent years being “trained to ignore the obvious”. Roger Harrison puts it into matter-of-fact language:

“It is love in its various forms that creates the ties that bind. Were it not for love, we would not be drawn to connect. We might connect for monetary advantage, but *there would be nothing of our hearts in our alliances*.” Harrison (1995) p102

This captures, for me, the problem with our orthodox theories of alliances and collaboration: There is “nothing of our hearts in our alliances”.

In the supply chain theories that currently dominate our discourse, our collaboration is described, purely and simply, as for monetary advantage. It would seem that most theorists do not believe in love in the workplace. Some may believe but be too embarrassed to admit it. Whichever is the case, since it is “the qualities of relationship that determine whether an organisation has the capacity for creativity”, (Stacey (2003) p395) any theory lacking this dimension will be wide of the mark:

“A biological and interpersonal congruence that lets us see the other person and open up room for him/her room for existence beside us. This act is called love... the acceptance of another person beside us in our daily living. Without love, there is no social process and therefore, no humanness... we are not moralising, we are only revealing the fact that, biologically, without love, without acceptance of others, there is no social phenomenon... We have only the world we bring forth with others, and only love helps us bring it forth.” Maturana and Varela (1998) p248

We should consider what this love should feel like, if and when we are able to release it in the workplace:

“The enjoyment of being productive, particularly in a team; the sense of craftsmanship that comes in doing quality work; the joy in creativity and artistry; the importance of beauty in the workplace; ...the behaviours that foster love: ...appreciation, recognition, acknowledgement; the bonds that are created through mentoring, teaching and coaching relationships; the value of being present, of listening and responding from the heart. I speak about giving trust to evoke trust and about the healing power of peacemaking and harmonising..” Harrison (1995) p162

Such love involves surrender and risk:

“When I truly understand that I am more than my ego and that I can if need be survive betrayal, domination and disillusionment, with pain but without permanent damage, then surrender becomes possible for me. When I fear that my self is something that can be taken from me by others, that is contingent upon their goodness and trustworthiness, then I hold back.” Harrison (1995) p161

This, then, is my agenda for re-enchanting the supply chain. It is founded on the recognition of supply chains as webs of complex processes of relating. They are enchanted already, in the sense that their complexity endows them with surprise. We can enchant them more fully by embracing our humanity at work, rather than denying it:

“Love is not a virtue, indeed love is nothing special. It is only the fundament of our existence as the kind of primates we are as human beings... aggression needs to be cultivated or it fades away, as we meet each other in the simplicity of our humanness.” Maturana and Verden-Zoller (1998)

Paraphrasing Ghandi again, if we want cooperation, we must *be* cooperation.

We can enchant our supply chains further still by recognising them as parts of the broader web of life on the planet: the pattern which connects. Doing this would change our priorities on a global scale. We can only hope that we have the collective imagination to do it before it is too late.

A Confession

“There are two equally dangerous extremes. To shut reason out, and to let nothing else in”
Pascal (1670)

“The opposite of a profound truth is sometimes another profound truth.” Bohr⁹

I now have to own up. I am guilty of a little subterfuge up to this point in the Thesis.

You see, the problem with doing a Thesis is that you have to adopt a theoretical position. And because we humans are still relatively poorly evolved as a species, our intellectual tradition is currently full of propositional thinking. So, despite being a heretic, I have to present my thoughts in a way that fits this tradition. This means I have to put forward a view and set it in opposition to another view.¹⁰ The unfortunate consequence of this is that we end up with a dichotomy. It looks as if I think that positivism, logical/linear thinking, causal processes and pretty much the whole of twenty-first century culture is “bad” or “wrong”; and that creatural, biological, emotional, non-linear thinking is “good” or “right”. I confess now that this is not how I see things. I do indeed think that the creatural perspectives are undervalued, but I believe that both perspectives are necessary. However, it is worth making some comments about the *relationship* between these two perspectives.

An orthodox theoretical view might suggest that what is needed is a *balance* between positivism and phenomenology. This may be faulty reasoning. It seems that in science we might have become a bit too fond of the idea of balance. The notion of equilibrium may have been applied too liberally, whether to the “balance” of nature or to management theory. Our evolving picture of “reality” now sees less equilibrium and more uncertainly and complexity.

In keeping with this, I see the relationship between positivist perspectives and phenomenological ones, as paradoxical. They exist at the same time without us being able to explain why this should be. Keats advises us to be

“Capable of being in uncertainties, mysteries, doubts, without any irritable searching after the truth.”¹¹

This kind of paradox is not just any old paradox, but a particular kind which we can think of as a *fractal paradox*. I’ll say a little more about that later, but first I want to go on with my confession.

Like M. Jourdain,¹² I have discovered a fancy name for something I have been doing for a long time. Better, I have discovered two! The first is *generative theory*, which is, I think, what I am trying to do in terms of introducing some contrasting ideas into the management dialectic in the hope of nudging the spiral in another direction. The other is “*apophatic inquiry*”. This is a venerable mystical tradition. Rather than being about “ways of knowing” (e.g. Reason (1994a)), apophasis is about *not knowing*. I suggest that managers could benefit greatly from learning how to *not know*. Learning to admit that they don’t know.

Apophasis is a process of “turning away”, or unsaying. It is beautifully explained in Sells (1994). In apophasis, a “correcting proposition” is introduced (in my case this is the set of assertions which I have made throughout the Thesis). But each saying demands an unsaying, which must itself be unsaid in turn. Sells explains:

“all discourse on the transcendent contains both saying and unsaying.. and it is in the tension between the two propositions that the discourse becomes meaningful. That tension is momentary. It must be continually re-earned by ever new linguistic acts of unsaying.” Sells (1994) p3

It is this that I have been striving for through the Thesis: A moment of Apophasis. We cannot approach the tacit directly; we have to catch it unawares.

It is now time for me to reassure my readers. I am content to take them back to their positivist assertions and propositional ways of knowing. In particular I realise *of course* that there is much that is linear and causal in business life. But I say this from a different place. I say it whilst also standing by the alternative assertions I have made throughout the Thesis. These are “true” also.

Returning to the idea of a fractal paradox, Reason offers the following:

“We may experience love as the opposite of hate, yet when we look a little deeper we realise that there is often a little love in the middle of our hate, and if we are honest a little hatred in the middle of our love...” Reason (1994) p31

Capra (1996) makes similar observations about rational and intuitive thinking, linear and non-linear thinking, quantity and quality. Holding this tension is important:

“If we are to build a civilization that is recognisably more humane and decent than our own, it will assuredly require a citizenry aware of the hidden attractions of both power and submissiveness, of the fine line between rationality and paranoia, of the Janus-faced character of so many events and the dialectical and psychological unity of so many opposites. Only then will its inhabitants be able to choose, to judge and to act as wisely as it is in the capacity of humans to do.” Heilbroner (1995)

Reflections and Suggestions for Further Research

“Little by little we subtract, faith and fallacy from fact
The illusory from the true,
And starve upon the residue.”
Hoffenstein (1954)

“It is a very old-fashioned notion to believe that an idea has to be right at every stage for the final idea to be right. This shows a complete lack of understanding of perception and patterning systems”
DeBono (1985)

There are two themes from the recent history of supply chain theory which offer great promise, and on which the journey of inquiry has only recently begun. The first of these is the theme of *relationships* between buyers and suppliers. Many have emphasised this theme: One of the pioneers was Lamming (1993). I have covered some of the work done in this area in previous chapters, but here I want to point to ways in which the research could evolve.

Cousins recently commented:

“A relationship is not an entity, it is a process” Cousins (2002)

This is an important observation which is not common to previous work in supply chain. It has potentially profound consequences for future research. Previous work has – if only metaphorically – treated buyer-supplier relationships as entities, and tried to operationalise them.¹³ Seeing a relationship as a process opens up possibilities for a more postmodern inquiry. Whitehead (1929) has been influential in this respect:

“Rather than thinking of relationships among entities as accidental or optimal, it is more helpful to think of relationships as essentially real and entities as a function thereof.”
(Gill (2000) explaining Whitehead)

From a supply chain perspective, this would mean seeing organisations as emerging from, or out of, relationships, rather than “having” them. In effect, relationships “have” organisation. We only have to think for a moment of the narrative of how any organisation comes into being to realise that there is great potential in this way of thinking. This also builds a bridge to an ecological view of the “pattern which connects”, since “for Whitehead, nature is essentially an organic process... in continuous creative advance. Consciousness is a participant in this advance, not a follower or an observer. The advance cannot be adequately understood if science retains a modernist agenda.” (Pickering (1995) p2)

This perspective would see the narratives of development and growth of organisations not as a metaphor of evolution, but as moments in the recursive and stochastic process of biological evolution itself.¹⁴ A process perspective would therefore be an ecological perspective.

One line of inquiry from this philosophical position would be to consider supply chains (or networks) as the biological manifestations of underlying processes (rather than the current approaches, which could be criticised as “saving the appearances”).¹⁵

The other theme offering great promise is Hall’s focus on *intangibles* in supply chains, including tacit knowledge (Hall (1996, 2001)). My recommendation here would be that researchers should reconsider issues of methodology. Currently, research focuses on making tacit knowledge explicit. I consider this unpromising. Better would be the application of approaches more adequate to participating with the tacit, such as qualitative, ethnographic methods.

In addition to these two promising existing lines of enquiry, I propose two relatively new ones:

- *Love and justice in supply chains.*

In earlier chapters, we considered the Kula Ring, which I would suggest is representative of a “supply chain” in a premodern society. I offer the observation that as a means of sensemaking – what I have called here an Integrative Process - it works. It generates improved intersubjectivity. It reduces the potential for conflict or war. By the same measure, our modern supply chains typically *do not work*. As Martin Luther King Jr. said: “We have guided weapons and misguided men.” (King (1963)). Why is this?

“Western science has created ...an arsenal of techniques which operate on the world powerfully but not sensitively. Instead of wisdom, science is providing mere knowledge... Technology, running far in advance of ecologically grounded values, has relinquished the goals of understanding and harmonisation, characteristic of premodern science.” Pickering (1995) p12

This situation not only creates ecological danger but also alienation:

“I distrust the applied scientists' claims that what they do is useful and necessary. I suspect that their impatient enthusiasm for action, their rarin'-to-go, is not just a symptom of impatience, nor is it pure buccaneering ambition. I suspect that it covers deep epistemological panic.” Bateson (1987)

Since:

“... all human problems require computational capacity which is, theoretically speaking, beyond human capacity, even when aided by computers” (Biggiero (2001))

we need a qualitatively different way of participating in supply chains if these dangers are to be addressed.¹⁶

- *Thinking about supply chains as complex processes of relating.*

I have made some tentative steps in this Thesis towards considering supply chains as complex processes. Further research could investigate themes of emergence, pattern and construction of meaning in supply chains. In this Thesis I have experimented with some theoretical frameworks; It might be useful to progress these further. I have also proposed that a more reflexive consciousness might contribute to enhanced intersubjectivity in supply chains.¹⁷ This line of inquiry is closely related to “Love and Justice” above.

The difficulties I have described here – both for the research and for the human species, are daunting. But we must try:

“Why try if our best efforts ultimately transform into the unforeseeable? Because that is the way the world is, and we are part of that world. That is the way life is, and we are part of life. We latter-day players are heritors of almost 4 billion years of biological unfolding. If profound participation in such a process is not worthy of awe and respect, if it is not *sacred*, then what might be?”
Kauffman (1995) p303

Conclusion: A Personal Reflection

In an interview not long before he died, George Harrison, Beatle, said:

“The purpose of life is to ask:
Who am I?
Why am I here?
Where am I going?”

At the time I heard it, I thought “George has got it wrong. He meant the purpose of life is to find out these things, not to ask.” But George had not got it wrong. What he said is precisely what this thesis is all about. It is the human condition that we find ourselves compelled to try to find out “the truth”. No matter what we do, we always want to know the answers. But whilst the search for absolutes gives meaning to our lives, nothing that we find to be a “fact” ever does. It merely becomes a brief stopping-place on our continued journey. The meaning is the journey, and the journey is the meaning. Sharing the journey is true participation:

“We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.”
Eliot (1942)

This is what I have tried to do in this thesis. It is a long and winding road.¹⁸

Endnotes

¹ Cited in various sources, for example see <http://www.mantleplumes.org/wordsofwisdom.html>. It is similar to a claim which R D Laing often made, that the obvious is often difficult for people to see.

² It seems Chester Barnard recognised some of this in 1938, when he wrote *The Function of the Executive* (Barnard (1938)), and also "Organisations as Systems of Cooperation" (Barnard (1980)). Have we made progress since?

³ Lest I be accused of eco-terrorism, I cite Hall (1976), Koestler (1967), Boulding (1971a), Bateson (1987) and Reason (1994) in support of this point

⁴ Gell-Mann cited in Kay (1991) and widely elsewhere

⁵ I admit with some embarrassment that that was what they were!

⁶ Roger Harrison also covers similar perspectives in Harrison (1995)

⁷ Rick Haythornthwaite of Invensys quoted in Kanter (2003)

⁸ There are a wealth of terms and definitions of love. From the Greek we have agape, eros, storge, phile. There is no space here to examine them all. Within the context of this Chapter, I use the meaning of love which psychologists sometimes call companionate love. This can be thought of as brotherly love, or natural familial love, but without any of the romantic baggage.

⁹ Niels Bohr, cited in www.commonsewonder.com

¹⁰ This is a worked example, if you will, of my constructivist model of languaging, imagining and sharing in operation in shaping how I constructed the rather one-directional dialogue of a PhD Thesis.

¹¹ Keats: "I amia" – the whole poem is relevant!

¹² In *The Bourgeois Gentleman*, (Moliere (1670)), Monsieur Jourdain discovered he had been speaking prose all his life.

¹³ Cousin's own previous work was in this vein.

¹⁴ There is a sort of causation here, but it is of the particular type of Aristotle's "Formal Cause", which again points back to the "pattern which connects".

¹⁵ From this perspective a supply network would meet Bateson's definition of "mind". (Bateson (1979))

¹⁶ For an excellent discussion of these issues see Rimor (2003)

¹⁷ It may be possible to investigate this further using tools developed by Kegan (1994) and Fisher, Rooke and Torbert (2001) which aim to identify levels of ego development/consciousness. Care would be needed in interpreting such research. It cannot be entirely objective since the researchers and subjects are embedded in the complex processes themselves.

¹⁸ I know George didn't write that one!

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APPENDICES

OTHER WORK PUBLISHED BY THE AUTHOR

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The anthropology of the supply chain

Fiefs, clans, witch-doctors and professors

Howard Price

KPMG Management Consultants, 8 Salisbury Square, London EC4Y 8BB, UK; and Centre for Research in Strategic Purchasing and Supply, School of Management, University of Bath, Claverton Down, Bath BA2 7AY, UK

Organizations in the West have learned the importance of organizing their businesses into cross-functional teams, focused on key business processes. In the future, even this will not be enough. Successful businesses will create value by implementing innovations across organizational boundaries: 'cross-functional' teams will become 'cross-organizational' teams. Supply chain management will need to nurture successful innovation within these cross-organizational teams. The fundamental challenges are social rather than technical, involving issues of trust, co-operation, power and politics. As a result of this, the roles and relationships required for best practice supply management are changing. This paper introduces new models that have been developed in order to understand the *cultural context* of customer-supplier relationships, and the *roles and relationships* needed for successful innovation in supply chains. Copyright © 1996 Elsevier Science Ltd

Keywords: supply chain management, innovation, anthropology

Imagine a piece of land twenty miles long and twenty miles wide. Picture it wild, inhabited by animals small and large. Now visualize a compact group of sixty human beings, camping in the middle of this territory. Try to see yourself sitting there, as a member of this tiny tribe, with the landscape, your landscape, spreading out around you, farther than you can see. No one apart from your tribe uses this vast space. It is your exclusive home-range, your tribal hunting ground. Every so often the men in your group set off in pursuit of prey. The women gather fruits and berries. The children play noisily around the camp site, imitating the hunting techniques of their fathers. If the tribe is successful and swells in size, a splinter group will set off to colonize a new territory. Little by little the species will spread.

Imagine a piece of land twenty miles long and twenty miles wide. Picture it civilized, inhabited by machines and buildings. Now visualize a compact group of six million human beings camping in the middle of this territory. See yourself sitting there, with the complexity of the huge city spreading out all around you, farther than you can see.

Now compare these two pictures. In the second scene there are a hundred thousand individuals for every one

in the first scene. The space has remained the same. Speaking in evolutionary terms, this dramatic change has been almost instantaneous; it has taken a mere few thousand years to convert scene one into scene two. The human animal appears to have adapted brilliantly to his extraordinary new condition, but he has not had time to change biologically, to evolve into a new, genetically civilized species. The civilizing process has been accomplished entirely by learning and conditioning. Biologically he is still the simple tribal animal depicted in scene one. He lived like that, not for a few centuries, but for a million hard years.

So much has happened in the past few thousand years, the urban years, the crowded years of civilized man, that we find it hard to grasp the idea that this is no more than a minute part of the human story. It is so familiar to us that we vaguely imagine that we grew into it gradually and that, as a result, we are biologically fully equipped to deal with all the new social hazards. If we force ourselves to be coolly objective about it, we are bound to admit that this is not so. It is only our incredible plasticity, our ingenious adaptability, that makes it seem so. The simple tribal hunter is doing his best to wear his new trappings lightly and proudly; but they are complex,

cumbersome garments and he keeps tripping over them. (Morris, 1969, pp 13–14)

Introduction: supply chain management and the tribal hunter

What has supply chain management got to do with tribal hunters? Why do we need an 'anthropology' of the supply chain?

It is good to see the literature on supply management developing. There is strong consensus about new organizational forms, porous organizational boundaries and networks. There is agreement about the potential benefits of vertical collaboration. Academics have developed rational, scientific explanations of the need for these changes. The tone is prescriptive: these are the new realities, and managers need to implement them. But it seems to me that an important perspective is missing.

It is too easy to assume that people will adapt themselves to whatever organizational forms are designed for them by academics and managers. Not enough attention has yet been paid to the difficulties of implementing complex organizational forms in the swampy ground of the real business world. Much has been written about relationships, but often from a rather dry and technical viewpoint.

In this paper, I suggest that the fundamental challenges are social rather than technical. How can groups of people work collaboratively together, as teams, when they have some shared interests and some differences? How can trust be developed in order that collaboration might flourish? How can the natural human tendency to apportion 'blame' be managed? How can creativity be nurtured in ambiguous circumstances? How can the unavoidable realities of power and politics be addressed?

When we see the fundamental challenges of partnerships in the supply chain in this light, it becomes clear that these are the same social challenges that have faced humankind for several thousand years. Humans deal with the challenges of communication, cooperation and competition by developing *cultures*. Within these cultures, *roles and relationships* emerge, in order to maintain the structure and function of the organization. Looking at the innovative organizations of the 1990s in this way provides an insight into how such organizations might be managed.

The paper starts with a review of our existing knowledge about creativity, learning and organizational networks. Drawing on this knowledge, a theoretical framework is proposed in order to better understand the *cultural context* of customer–supplier relationships and the *roles* that need to be developed in order to achieve successful innovation in supply chains.

The management of surprise

The evolution of economies, societies and technology has led to increasing complexity and uncertainty for

many organizations. This uncertainty limits their ability to develop or implement long-term plans, and increases their need to be able to adapt to their environment and respond to the surprises that will arise:

A few years ago we were saying that the 'Management of Change' is the biggest challenge organisational leaders face. Today we hear that the problem is no longer the management of change but *the management of 'surprise'*, and we academics are asked more and more frequently to explain not just how organisations can make major transformations, but how organisations can do these activities faster and faster. (Schien, 1993, p 85)¹

For many organizations, the idea of an end-user 'product' as a piece of hardware has changed to encompass software (smart products), fashion and lifestyle, information, service and consultancy (Peters, 1992). The same is also true in industrial markets, where buyers expect to develop value-added relationships with their suppliers, encompassing much more than simply the supply of a product at a particular price. The increasing importance of the 'soft' elements of products, in combination with the development of technology and systems that enable the production of small batch sizes at relatively low cost, has led to increased product differentiation and customization. Technology has reduced the cost of manufacturing products, particularly labour cost as a proportion of total cost, enabling much more attention to be paid to 'value added' activities.

This in turn is leading to the increasing importance of 'knowledge' and 'ideas' as major sources of value and wealth in developed societies. Some writers have interpreted this as the emergence of 'knowledge as capital', leading to the need for a redefinition of business economics (Handy, 1993, 1994). In this paradigm 'the function of an organization is to make knowledge productive', and 'people with knowledge will have to gain new knowledge every three or four years or become obsolete'.² From this viewpoint, Nelson and Winter's (1983) evolutionary approach to innovation seems particularly cogent.³

Creativity in organizations: from manufacturing to mento-facturing⁴

Given the emergence of 'knowledge as capital', and the uncertainty of the environment, a key feature of survival for an enterprise will be the ability of its members to

¹The phrase 'management of surprise' was coined by Robert Horton, former chairman of British Petroleum (according to Schien, 1993).

²Some organizations are already espousing these values (Unipart, Smithkline Beecham).

³Nelson and Winter stated that the trajectory (direction) of technical developments by firms in an industry would be affected by their 'selection environments', these environments being made up of both economic and political/legislative factors. They describe such a view as an evolutionary approach (there are obvious parallels with Darwinian theory).

⁴ie from using the hands to using the mind. Mr W Hendriks, a senior manufacturing director from Philips, introduced me to the term, I don't know if it is his own term.

generate new ideas and identify potential problems and solutions. These are latent human instincts, but have tended not to be fully utilized in business:

The exploratory drive is now recognised to be a basic, primarily biological instinct, as basic as the instincts of hunger and sex; it can on occasions be even more powerful than these. Countless experimenters—starting with Darwin himself—have shown that curiosity, and the ‘seeking out of thrills’, is an instinctual urge in rats, birds, dolphins, chimpanzees and man; and so is what behaviourists call ‘Ludic Behaviour’—playfulness. (Keostler, 1967, p 153)

..I am tempted to define *creativity*...as the healthy enjoyment of the search for novelty. The neurophysiologists tell us that the propensity for such exploration is actually wired into the brain. (Gedo, 1990, p 35) (italics in the original)

The term most often used in management terminology for this ‘search for thrills’ is innovation. In much of the literature on ‘innovation’, product development and innovation are seen as synonymous. However, it is useful to view innovation as a term that applies more broadly to the successful implementation of creative ideas in an organization:

Innovation refers to the process of bringing any new, problem solving idea into use. Ideas for reorganising, cutting costs, putting in new budgeting systems, improving communication or assembling products in teams, are also innovations. Innovation is the generation, acceptance and implementation of new ideas, processes, products or services. It can thus occur in any part of a corporation, and it can involve creative use as well as original invention. Application and implementation are central to this definition; it involves the capacity to change or adapt. And there can be many different kinds of innovations, brought about by....different kinds of people; the corporate equivalent of entrepreneurs. (Kanter, 1985, p 20)

It is clear that innovation involves change in organizations and in their environments. Such change can be either incremental or radical (eg Kanter, 1985; Clark and Staunton, 1989). An incremental innovation will involve what Smith and Tranfield (1991) have described as Morphostatic change—adjustment to the environment. This type of innovation is very close to the idea of continuous improvement. A radical innovation will be Morphogenic—it will involve ‘breaking the mould’ (Schumpeter’s ‘Creative Destruction’, 1911).

Lawson (1980) has identified a common set of five stages described in the literature of the creative process (Figure 1).⁵ These stages are: first insight, preparation, incubation, illumination and verification. Lawson was writing about individuals, but Gordon (1961) observed that ‘the individual process in the creative enterprise enjoys a direct analogy in the group process’. Nevertheless, the creative process is still largely a mystery. Jung (1933) said that ‘the creative act will forever elude understanding’, and that creativity ‘plumbs

⁵They seem identical to Patrick and Usher in Roy (1986).

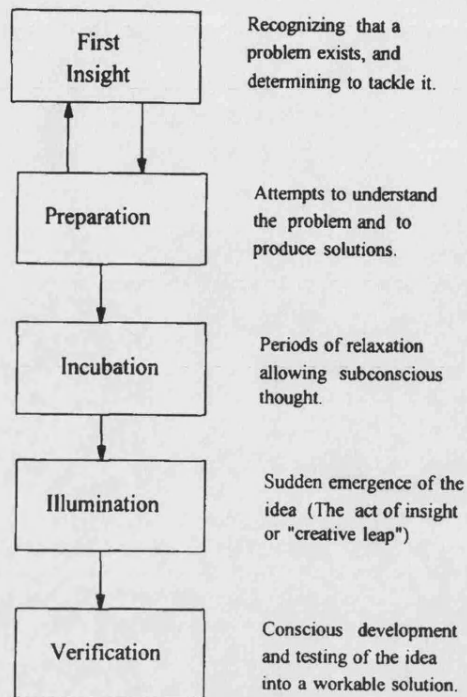


Figure 1 Five-stage model of the creative process
Source: Lawson (1980) adapted by Roy (1986)

the depths of primordial vision’. Such vision is seen ‘as in a glass darkly’. Whatever the mysteries of the process, creativity is borne out of the juxtaposition of different, conflicting ideas. Writers and researchers have identified the importance of groups of people with different experiences and intellectual backgrounds to the development of creative solutions.

Imai *et al* (1985), observed that this was necessary for ‘variety amplification’ in the product development process. Gerstenfeld (1970) notes the importance of cross-fertilization of ideas resulting from a mixture of specialisms. At a more theoretical level, Koestler (1967) and de Bono (1973) stress the importance of introducing concepts that have no obvious relevance. De Bono writes of ‘discontinuities’ and ‘re-patterning’, Koestler of the ‘bisociation’ of differing ideas.

The extent to which an enterprise can create conditions that maximize the productive creativity of its members will become a key success factor. The organizational climate will affect the level and quality of creativity, since there is evidence that environmental conditions are at least as important as individual potential for creativity.^{6,7}

⁶This is another version of the nature-nurture debate.

⁷Research by Amabile (1990) on scientists found that: ‘The environment was a much more salient factor than the individual for these R & D scientists in their experience of specific creative...events. Certainly, at a macroscopic level, personal factors such as general intelligence, experience in the field, and ability to think creatively are the major influences on the output of creative ideas by R & D scientists. But, assuming that hiring practices at major corporations select individuals who exhibit relatively high levels of these personal qualities, the variance above this baseline may well be accounted for primarily by factors in the work environment.’

One of the most important changes in business organizations in recent decades has been the increased use of cross-functional teams. These teams initially emerged as cross-functional product development groups set up to support 'concurrent engineering', first in the Far East and later in the West (Imai *et al.*, 1985; Coxhead and Davis, 1992). Such teams typically include representatives from purchasing, design, development, manufacturing, quality and marketing. They may either be self-managing (Ouchi, 1982; Imai *et al.*, 1985) or have some form of leader or project champion (Coxhead and Davis, 1992). More recently, the same cross-functional approach has been applied to other business processes, including supply management.

Several studies have suggested the importance of interactions between firms to successful innovation. Rothwell (1985) stresses the importance of networking in product development. Von Hippel (1988) describes the process of 'informal know-how trading' between individuals in different firms⁸ and refers to 'the distributed innovation process as a system'. Bessant and Grunt (1985) report a similar process in German engineering companies. Blois (1972), Teece (1986), Contractor and Lorange (1988) explain the need for collaboration in terms of access to complementary assets,⁹ resulting in 'vertical quasi-integration'. Reve (1990) emphasizes the importance of such alliances at the strategic level.

This increased emphasis on the interface *between* organizations as the driving force for innovation has resulted in the evolution of cross-functional teams into *cross-organizational teams*: multi-functional project teams with members nominated from vertically collaborating organizations. Lamming (1993) has suggested viewing a developed form of such a vertical collaboration as a 'quasi-firm' with its own specific cultural values and identity.

In summary, the following important points about creativity in organizations emerge from the literature:

- (1) Creativity is a natural instinct, linked to psychological health.
- (2) The creative process at individual and group levels includes similar stages.
- (3) Organizational creativity is often a social process involving teams working in collaboration, rather than exceptional individuals working alone. If team members have different backgrounds, then this can stimulate creativity. If the team is built up from members of different, collaborating organizations, then the potential for innovation is particularly high.

- (4) The level and quality of creative output will be significantly affected by the 'environment', or culture, within the quasi-firm.

Learning

Learning has been defined as 'a relatively persistent change in an individual's possible behaviour, due to experience factors which influence it' (Fontana, 1984, p 118). The use of the term 'possible behaviour' is of note, since the individual does not have to demonstrate a new behaviour to have learned, so long as a new possibility has been added to the 'repertoire'. Kolb (1974) developed an experiential model of how people learn. The process involves a cycle of reflecting on experience, deriving some abstractions or generalizations from this reflection, and then experimenting with these new concepts in the outside world. This leads to further experience and further reflection and generalization. Revans (1984) also views learning from an experiential perspective, but in his description of action learning, he summarizes learning with the 'learning equation': learning = P + Q, where P is 'programmed knowledge' and Q is 'questioning insight', Q can 'never be taught' and comes from experience and 'trial and error'. 'P learning adds to the sum of knowledge, and Q learning reorganises it' (Brooks, 1992).¹⁰ Revans (1985) lists certain blockages to learning, namely the idolization of past experience, the charismatic influence of other managers, and managers' 'impulse to spontaneous action'.

Argyris (1982) focuses on the problem of managers whose learning is blocked by either emotions or past experience. He identifies difficult situations as requiring 'double loop' learning, where the manager needs to break out of inappropriate habits of thought:

'One type of organisational learning involves the production of matches, or the detection and correction of mismatches, without change in the underlying governing policies or values. This is called *single loop learning*. A second type, *double loop learning*, does require re-examination and change of governing values. Single loop learning is usually related to the routine, immediate task. Double loop learning is related to the non-routine, the long range outcome.' (Argyris, 1983, p 116)

The notion that there are various 'levels' of learning is common in the literature. One such framework is from Bateson (1972): *Zero learning* occurs where there is minimal change in responses over time. There is an absence of correction through 'trial and error'. *Level One learning* is learning that results in the acquisition of *specific facts*, knowledge or responses. This is typical

⁸This know-how sharing does not just cover information in the public domain. Von Hippel said that engineers would divulge quite secret information if *in their judgement* it did not pose a risk to the employing firm.

⁹The model does not seem to take full account of the unusual nature of 'knowledge assets', concentrating instead on physical assets.

¹⁰For examples of criticism of Revans' views on action learning, and particularly on the L=P+Q formula, see Smith (1988) and Sutton (1989). It is interesting in the context of this paper that Smith believes that 'Q' is teachable, but through techniques such as synectics and ethnography.

of many learning situations and of some basic problem-solving. The results of such learning are difficult to apply, outside the specific situation. *Level Two learning* requires an understanding of the *context* of specific facts and responses.¹¹ This results in an appreciation of how specific facts and responses may be organized and how they relate to the outside world. Such an understanding allows the development of strategies for learning, or '*learning to learn*'. Finally, *Level Three learning* requires a critical review of the assumptions that were made in the development of learning strategies at Level Two. This awareness would enable the learner to develop and refine his or her own learning strategies.¹²

Argyris' 'double loop' learning and Revans' 'questioning insight' are at learning Level Two and Three. In the complex business environment, the quality of learning taking place at these 'higher' levels will be critical for business survival. Such learning is not possible without an awareness of the self, of the environment, and of a range of possible approaches and outcomes.

Problem-solving and problem-finding

Research into problem-solving in humans has a reputation for being the most chaotic of all identifiable categories of human learning. (Davis, 1966, p 39)

Common sense might suggest that learning and problem solving are closely related, but some of the ideas already considered illustrate that prior learning can inhibit problem-solving. Asher's Neo-Field Theory says that whilst learning is forming concepts in a cognitive system, problem-solving is the inverse of this, in that problem-solving involves disrupting established concepts. Distinctions can also be drawn between the process of problem-finding and the process of problem-solving. In regard to management development, Revans (1984) differentiates between 'puzzles' and 'problems'. Puzzles have only one possible solution; how to do it and when the puzzle is complete is clear to everyone (eg a crossword or jigsaw puzzle). Most management problems do not fall into this category. Instead, there is a range of possible interpretations of the current situation and a range of possible approaches. Issues are linked and overlap in complex ways. Managing 'surprise' involves political and social issues of considerable uncertainty. Discovered problems 'do not have a clearly formulated task, instead there is vague unease and dimly felt emotional or intellectual tension. Because the problem itself has yet to be defined, there cannot be an agreed

method for resolving the tension. For the same reason, one cannot even imagine in advance what a 'solution' might be. Great creative breakthroughs....involve this kind of approach' (Csikszentmihalyi, 1990).

Learning organizations

Whilst much has been written about learning organizations, our understanding of the phenomenon is underdeveloped. As Huber (1991) concludes after an extensive review 'there is little in the way of substantiated theory concerning organisational learning, and there is considerable need and opportunity to fill many gaps'.

Some writers (McGill *et al*, 1992; O'Hare, 1988) draw a distinction between *organizational learning* at what could be described as Bateson's Level One, which is seen as necessary but not sufficient, and the more 'transforming' learning necessary to ensure continuing survival in turbulent times (ie Level Two learning in an organizational context).

Huber (1991) analyses organizational learning under four constructs: knowledge acquisition, information distribution, information interpretation and organizational memory.

Knowledge acquisition

Organizations have some knowledge 'at birth', inherited from the parents or founders. They then gain more knowledge from experience. Organizations can also carry out 'self-appraisal' by which Huber means monitoring the effectiveness of teams and the psychological health of the members of the organization. 'Searching' is described as the process of sensing and monitoring the organization's internal and external environments. This would cover activities ranging from strategic marketing research at the 'macro' level, to the activities of 'gatekeepers' at the 'micro' level. This category also includes performance monitoring.

Information distribution

This relates to the way in which information is shared around the organization. By having an effective information distribution system, the organization increases the likelihood of ideas being combined in new and potentially creative ways. The construct relates to 'soft' as well as 'hard' data.

Information interpretation

Meanings are attributed to information received by the organization. Shared value systems play a significant part in this aspect of learning (Huber refers to 'uniformity of cognitive maps'). Unlearning is also of importance.

Organizational memory

'Hard' information is stored on computers and hardcopy and remembered by individuals. Equally important is 'soft' or cultural information.

¹¹Bateson coined the term 'deutero-learning' to describe learning at this level. This term was later used by Argyris.

¹²Bateson makes the point that learning at Level Three is rare, since it requires an individual to critically examine their own values and assumptions. He does, however, accept that it is possible and even gives examples (p 274).

Table 1 Strategies for using others to learn

Category	Using others as	Examples
<i>Clearing the way for learning</i>		
Accepting	Means of releasing, dispelling, catharting, allowing the expressing of one's negative feelings, thoughts	Sharing negative feelings, father confessor
Stimulating	Source of energy, enthusiasm	Energizing, others provide enthusiasm
Confirming	Source of confirmation, reinforcement, confidence, support, encouragement	Seeking confidence, assurance
Sanctioning	Means of permitting, legitimizing, authorizing	Makes allowance for failure, permits risk-taking, seek permission to try things out
Structuring	Shaping, organizing one's learning opportunities	Exposes me to new situations, sets up opportunities for me to observe
<i>Tooling up for learning</i>		
Equipping	Source of understanding of or methods for learning	Provides techniques for learning
<i>Direct learning interventions</i>		
Advising	Source of recommendations, suggestions, guidance	Share ideas about what to do
Exposing	Means of drawing out, clarifying one's ideas, feelings, assumptions	Looking for a listener, clarify what I think, 'I didn't know I thought that!'
Building	Developing ideas, progressing, extending ideas	Seek out others on same wavelength to develop ideas, spark off ideas
Testing	Sounding out, anticipating snags, identifying faults, trial, opinion	Seek objective criticism from others, use them as guinea-pigs, try things out on them
Confronting	Alternative viewpoints and perspectives, challenging, disconfirming	Get them to be devil's advocate, expose oneself to thoughts from other cultures, etc
Feeding back	Means of reviewing, source of observations and feedback on one's actions and their consequences	Asking feedback from someone who knows you, ask others to observe you
Explaining	Source of help in clarifying, making sense of what's been happening	Help identify underlying causes, using consultant to interpret/make sense of things
Modelling	Source of examples of behaviour; a focus for imitation, demonstrations	Watching positive and negative models
Sharing	Source of second-hand, vicarious experience, accessing others, experiencing and learning through listening and questioning	Others sharing their experiences, Reading others' writing

Source: Stuart (1984)

Any consideration of organizational learning needs to recognize that learning is taking place at different places within the organization hierarchy or structure. Imai *et al* (1985) refer to this as 'multi-learning', that is, learning at the level of the individual, the work group and the organization.

At the work group level, Kolb's (1974) analysis of learning styles identifies a potential benefit from cross-functional team working. Kolb identified that different functions tended to display different preferred learning styles. A team that combined a balanced mix of learning styles could be particularly effective. Additionally, the cross-functional team provides the opportunity to

bring together different views, experiences and approaches. A further and important advantage of the cross-functional team in relation to learning is that it provides the opportunity for individuals in the team to use each other to develop their own learning. An outline of the potential ways of 'using others to learn' is given in Table 1.

A review of the literature on learning organizations (Price, 1994) reveals the following common themes.

Holistic/integrative emphasis

Key words used in descriptions include: 'whole picture, holistic, vision, framework, awareness'. This relates to

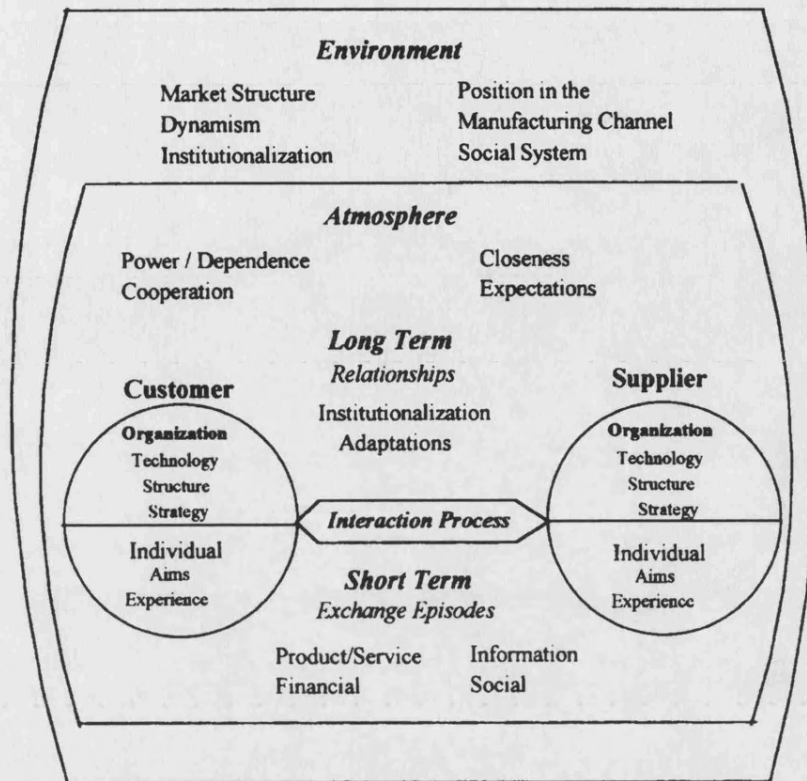


Figure 2 The IMP interactive model of buyer-supplier relationships
Source: Hakansson (1982)

the overall level of 'awareness' that exists in the organization, not only the awareness of the 'leaders' but also of the followers. Both 'self-awareness' and an awareness of the environment are required.

Orientation towards change

Key words: 'forward looking, experimentation encouraged, change/transformation, fluid roles'.

Emphasis on teams and team rewards

Key words: 'collegiality, team rewards, shared responsibility'.

Emphasis on creativity and risk-sharing

Key words: 'encourages innovation, entrepreneur, risk-taking, creative'.

Open, mutually supportive culture

Key words: 'open work environment, trust, shared responsibility, norms, values, lateral communication and 'clan culture'.¹³ There is wide agreement that an open and supportive culture is required if the learning is to be 'transformational'.

Networks

An international grouping of researchers called the IMP Group has identified some important features of industrial markets.¹⁴ Recognizing that both buyers and sellers can be equally 'active' in a transaction between them, a model has been developed that describes the overall interactions between buyers and sellers in terms of: the *elements* and *process* of interaction; the *participants* involved in the interaction (both the individuals and the organization); the *environment* in which the interaction takes place; and the *atmosphere* affecting and affected by the interaction. The model is shown in Figure 2.

The interaction process is described in terms of both short-term '*episodes*' and in the longer term, the development of '*relationships*'. Importantly, the IMP Group also focuses on the multiple nature of interactions in which an organization is involved. Any firm in an industry is likely to be interacting with a large number of different organizations, so it can be described as operating within a *network*. There may be interrelationships between several 'actors' in the network, such that the interaction process becomes

¹³'Clan Culture' is explained later in this paper.

¹⁴Markets between industrial buyers and sellers, rather than end-user markets.

quite complex. Thorelli (1986) defines a network as 'two or more organizations involved in long term relationships'.

Some writers have identified the strategic importance of networks, describing firms that become successful by establishing themselves as a 'core' or 'hub' to manage their network (Jarillo, 1988; Baden-Fuller and Lorenzoni, 1993).¹⁵ Hamel and Prahalad (1990) note that in many industries it is unlikely that an organization can master all the key competencies needed for survival. In these circumstances it becomes essential that organizations form collaborations to gain access to such competencies, and where appropriate 'learn from partners'. The network perspective sees value creation as the result of a complex web of interactions. The boundaries of the individual firms may be indistinct or may overlap.

The transaction cost economics approach (Coase, 1937; Williamson, 1975) has considered the question 'When should firms integrate activities into their own ownership, and when should they contract for supply of these activities from the market?' In its simplest possible interpretation, this is the 'make or buy' decision, with a built-in assumption that 'buy' is an arm's-length transaction based on cost. In the language of the theory, the choice is between 'markets' (buy) and 'hierarchies' (make).

More recently, Williamson and others have recognized that other organizational forms exist 'between' those of markets and hierarchies (Thorelli, 1986; Williamson, 1985; Jarillo, 1988, 1993; Ouchi, 1980; Williamson and Ouchi, 1981; Boisot and Child, 1988). It is now recognized that most real business transactions lie between these extremes. The growing literature on this subject attempts to integrate the field of organizational micro-economics with behavioural theories of the firm.

So what does lie between markets and hierarchies? Contractor and Lorange (1988) list technical assistance, buyback agreements, patent licensing, franchising, know-how licensing, nonequity cooperative agreements and equity joint ventures, in sequence of their increasing level of inter-organizational dependence. Contractor and Lorange also emphasize the importance of vertical quasi-integration in interfirm cooperation. Macbeth and Ferguson (1994) list joint ventures, strategic alliances, minority shareholding and partnership (in sequence, with partnership being closest to 'markets').

Thorelli (1986) introduces the IMP view that networks lie between bureaucracies and markets. Jarillo (1988) builds on this view but adds a strategic emphasis, in order to develop a model of the 'strategic network': '(the) understanding of the network as something that entrepreneurs use purposefully to obtain a competitive advantage for their firms, instead

of as a 'metaphor' to describe business transactions, constitutes the theoretical thrust of this paper.' (p 32)¹⁶

In addition to the IMP network approach, others have emphasized the importance of the relationships between customers and suppliers. These include Lamming (1993), Sako (1992), Hines (1994), Macbeth and Ferguson (1994) and Jarillo (1993). In an environment of rapid technical and social change and uncertainty, increased attention is being paid to the advantages of collaborative buyer-supplier relationships, rather than the alternative options of vertical integration or arm's-length contracting.

There is considerable theoretical and research support for the importance of collaborative learning across organizational boundaries. In relation to innovation, Twiss (1992) asserts that 'frequently in an industrial setting, the greatest advances have been made across industrial boundaries'. Gerstenfeld's (1970) list of characteristics of the creative organization cites 'cross-fertilization of ideas resulting from a mixture of specializations' and 'porous organizational boundaries'. Imai *et al* (1985) underline the importance of interaction between people from different functional backgrounds. Allen (1977) identifies the importance of 'technological gatekeepers' in accessing technology from outside the organization. Crane (1972) uses the term 'invisible college' to describe the exchange of information between different technical specialists in an industry. Bonaccorsi and Lipparini (1994) conclude that 'a partnership based on long-term, trust-based alliances could not only provide flexibility, but also a framework for joint learning and technological and managerial innovation'.

An anthropological perspective: the 'clan' concept

Ouchi (1980) introduced the notion of the 'clan' as an organizational type. Ouchi identifies that an intermediate organizational type, between markets and hierarchies, would need to maximize goal congruence, whilst tolerating high levels of ambiguity in performance evaluation. Such an organizational type would need certain *cultural attributes*. The theoretical background for the clan derives from Durkheim, who criticized contracts as a means of regulating behaviour:

It will be said that there are contracts. But, first of all, social relations are not capable of assuming this juridical form....A contract is not self-sufficient, but

¹⁵Jarillo (1993, pp 127-150) stresses that a 'hub' firm does not simply 'control' the other members of the network in an adversarial or arm's-length fashion. Rather, the network is a cooperative system where trust is an important element.

¹⁶Miles and Snow (1992) have developed a typology of industrial networks. They identify three types: stable, internal and dynamic. 'Internal' is essentially an attempt to get as close as possible to market mechanisms within one company, perhaps by introducing market competition, or removing fixed transfer prices. 'Dynamic' networks are the closest to the market form, where the members of the network change frequently. 'Stable' networks are formed around a core company, and a number of the suppliers or customers become long-term nodes on the network. Jarillo's 'strategic network' concept is closest to the 'stable network' form.

supposes a regulation which is as extensive and complicated as life itself....A contract is only a truce, and very precarious, it suspends hostilities only for a time. (Durkheim, 1933, p 365)

Durkheim defined a clan as an intimate association of individuals who are connected to each other through a variety of ties. Ouchi (1982) defines a clan as 'an intimate group of individuals who know one another well, but who typically do not share blood relations'. In Ouchi's model, high goal congruence is achieved through a process of socialization:¹⁷ A Clan, as Durkheim points out, 'provides great regularity of relations and may in fact be more directive than the other, more explicit mechanisms'. This leads to the concept of 'soft contracting':

Under hard contracting, the parties remain relatively autonomous, each is expected to press his or her interests vigorously, and contracting is relatively complete. Soft contracting, by contrast, presumes much closer identity of interests between the parties, and formal contracts are much less complete. This is the clan-type management style. (Williamson and Ouchi, 1981, p 361)

For instance:

In a clan, equity is achieved serially rather than on the spot. That is, one clan member may be unfairly underpaid for three years before his true contribution is known, but everyone knows that his contribution will ultimately be recognised, that he will still be there, and that equity will be achieved in the end. That is what is meant by serial equity. It is asking quite a lot for someone to continue to work hard for three years of underpayment, especially assuming universal self-interest. For that reason, a clan will emerge only if there is a strong social memory. (Ouchi, 1982, pp 27-28)¹⁸

Alvesson and Lindkvist (1993) investigate clans further and distinguish between three types of clan. The '*economic cooperative*' clan, the '*social integrative*' clan, and the '*blood kinship*' clan. The '*economic cooperative*' clan has members who believe that in the long run their economic interests will be best served by cooperative behaviour within the clan. In the '*social integrative*' clan, members make judgements about their involvement in the organization based on non-economic factors, such as enjoying the work, the feeling of belonging, and identifying with the aims of the group. Finally, the '*blood kinship*' clan is made up of blood relations:

What makes the clan particularly interesting is that it suggests a possibility of control beyond the market and bureaucracy, i.e. in situations in which considerable problems of measurement and far too great uncertainty

exist for prices and rule systems to be able to function well. In the clan form, with its lower demands on formalised, sophisticated information—common ideas, beliefs and values instead function as information carriers—yielding sufficient guidance for action, providing sufficiently good measures of the values to be exchanged, etc. (Alvesson and Lindkvist, 1993 p 430)

Alvesson and Lindkvist give research examples of business organizations where the 'social integrative' clan mode predominates. This evidence supports the view that successful businesses may be driven by clans in which social considerations (at least sometimes) outweigh economic ones. Ouchi (1982) highlights the importance of trust in the clan. He quotes the French anthropologist Marcel Mauss, who noted 'the willingness to be in someone else's debt is an important signal of trust'. Thorelli (1986) offers an interesting view: trust is 'an assumption or reliance on the part of A that if either A or B encounters a problem in the fulfilment of his implicit or explicit transactional obligations, B may be counted on to do what A would do if B's resources were at A's disposal' (p 37).

Ouchi provides a useful bridge from the literature on clans to the literature on networks, porous organizational boundaries and buyer-supplier relationships by defining an organization as follows: 'What is an organization? An organization, in our sense, is any stable pattern of transactions between individuals or aggregations of individuals' (Ouchi, 1980, p 140).

Womack and Jones (1994) use the term 'lean enterprise' to describe a collection of firms working collaboratively to serve a specific end-user market whilst optimizing the use of resources throughout the entire 'value stream'. Jarillo uses the term 'strategic network' to describe the same phenomenon. Collaboration between firms in a network can generate value for the whole network, but in order for this value to be realized the network must share some common goals. Some contracts will be needed, but as Durkheim says, a contract is only a truce. Long-term success requires the development of relationships and trust throughout the network.¹⁹

Some new analytical models

Boisot (1987) introduced a framework for categorizing organizational types, which was based on the communication and processing of information within an anthropological context. Jarillo (1988, 1993) also categorized organizational types, but using a different framework; the 'legal form' (ie single entity versus a number of legally separate firms) and the 'nature of the relationship'.²⁰

¹⁷Ouchi cites research by Kanter in support of this. Kanter (1972) found that some 'utopian communities' were also successful businesses.

¹⁸Later work by Sako (1992) supports this view. Sako categorizes such relationships as obligational contractual relation, in contrast to the typical UK relationship of arm's-length contractual relation.

¹⁹Baden-Fuller and Lorenzoni (1993) gives case study examples of the development of relationships and trust in various strategic networks.

²⁰What follows is a highly simplified account of some of the sources of the theory. For more detail see Boisot (1987) and Jarillo (1988).

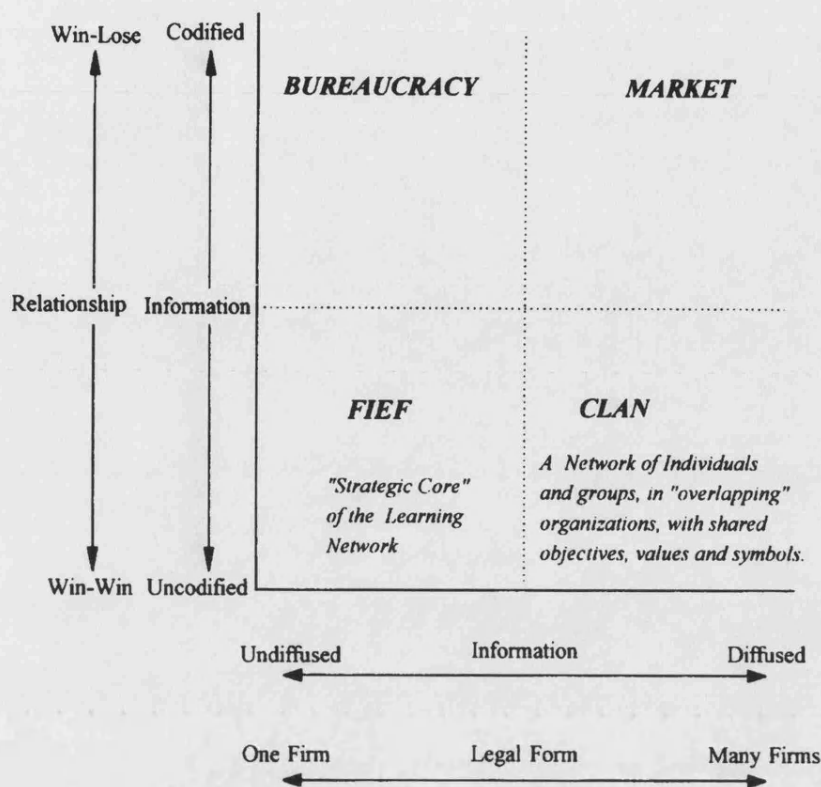


Figure 3 A framework for the cultural analysis of networks

This paper introduces a matrix that integrates these two perspectives—the strategic (Jarillo) and the anthropological (Boisot).²¹ The matrix is shown in *Figure 3*. The framework is based on the following premises, which are consistent with the IMP network model: first, that business interactions involve the exchange of information in various forms (both ‘hard’ and ‘soft’); second, that over time such transactions can develop into relationships; and finally, that business enterprises can take various forms, some of which can be made up of several legal entities rather than a single firm. The elements of analysis are therefore ‘*information communication*’, ‘*type of relationship*’ and ‘*legal form*’.

In *Figure 3*, the x-axis shows two separate but related dimensions of any communication. One dimension is the extent of ‘diffusion’ of information, that is, the size of the ‘audience’ reached by the information. ‘Diffused’ information is information that is readily shared, whereas ‘undiffused’ information is not readily shared. The second dimension is the legal form of the firm. At one extreme of the axis would be a small single firm without a developed network. Here, the amount of information diffusion will be relatively low (‘undiffused’). At the other extreme, a large network of firms involving a large number of people will enable wide diffusion.

The y-axis shows two more aspects of communication. The first dimension is the extent of ‘codification’ of the

information. Codification is the process of replacing direct experience with symbols. This enables the recording of experiences and their communication to a wider audience (for example, in a written letter). However, the process of codification also results in a loss of some of the richness of detail of the original experience; one can no longer get the ‘whole picture’. In contrast, uncodified communication involves all the subtleties of face-to-face or non-verbal communication; in certain contexts, a shrug or a wink can convey meanings that would be difficult or even impossible to convey indirectly in writing. But uncodified information can also require more effort from the recipient:

A... complication with uncodified information is that its lack of structure leaves much room for personal motivation, attitude, and belief to fill the gap in interpretation. Quite often a prior sharing of context or experience will not of itself suffice to get a fuzzy message across. There must also be some sharing of values to ensure that the communicating parties are on the same wavelength....Shared values are the cement that bind together our partial and fragmented experiences, setting them into a coherent pattern.....The sharing of uncodified information, in sum, requires a level of familiarity and trust between communicating parties that can usually only be built up in or around a face to face situation. (Boisot, 1987, pp 50–51)²²

²¹A detailed explanation of the development of the model can be found in Price (1994).

²²It has been suggested that holistic and convergent thinking are located in different brain hemispheres. The same could also be true for codified and uncodified communication—‘art’ and ‘science’.

Codified information has been converted into words or formulae in order to reach a greater audience. But the process of codification always involves some simplification of the message, and less can be assumed about the prior knowledge or experience of the audience. There may be little opportunity for testing of understanding or feedback. To illustrate the difference between codified and uncoded information, the purchase of shares by computer on the international stock exchange can be achieved by 'codified' means. In contrast, companies collaborating in a joint product development project may need to exchange a large amount of 'uncodified' information, as well as some 'codified' information. In summary, 'codified information is information that can easily be set out on paper, whilst uncoded can not' (Boisot, 1987).

The second dimension on the y-axis is the 'relationship' between communicating parties. The continuum used here is between 'win-win' and 'win-lose'. I have aligned 'win-win' with uncoded information and 'win-lose' with codified information. The reason for this is as follows. Most business communications will involve a mix of both codified and uncoded information. However, business experiences suggest that it is the presence of relatively uncoded information that 'makes the difference' when trying to reach a 'win-win' relationship. The observation that the protagonists are around the table and talking is universally seen as better news than if they are communicating only by formal business letters, press releases or, even worse, via lawyers. Managing and dealing with feelings, impressions and motivations require the full breadth of interpersonal skills—uncoded 'art' supplementing codified 'science'. When attempting to reach agreement in business, 'facts' and 'feelings' are equally important.

Within this analytical framework, four *cultural styles* can be identified. A *bureaucracy* is an impersonal form of social organization. Codified information is communicated within a single legal entity—Williamson's 'hierarchy'. The lack of shared values and the limited richness of the information makes 'win-lose' relationships the norm. A *market* is represented by many firms exchanging codified information. The opportunity for creative solutions to be developed from open exchanges of personal information is limited. 'Hard contracting' and 'win-lose' relationships prevail. A *fief* is a social organization made up of a very small number of people, with shared values and beliefs. Much of the information exchanged is uncoded, necessitating face-to-face communication. Typically, there is an informal power relationship involving a charismatic leader. I have positioned this toward the 'single firm' end of the matrix. An example of such a group would be a senior management team within the 'strategic core' of a network. The personal relationships between a small number of individuals present the opportunity for 'win-win'

relationships.²³ A *clan* is also a small group with common values exchanging uncoded information. Here, there is a more 'colegial' process between individuals with lateral relationships. The group can be larger than the fief, as it is not hindered by the span of charismatic power, but is still limited by the need for face-to-face communication.

As previously highlighted in this paper, the clan group is of interest for several reasons in relation to economic effectiveness, learning and innovation. The socialization process, the development of shared values, soft contracting and trust provide the opportunity for powerful 'win-win' relationships. Comparing the characteristics of a clan with those of an innovative organization (supportive culture, holistic emphasis, orientation towards change, team emphasis, emphasis on creativity and risk-sharing) leads to an interesting conclusion. An innovative organization can be seen as a clan organizational type with one important additional element: high levels of 'exploratory drive'. An innovative organization is, in essence, a clan in search of thrills.

The framework of fiefs, clans, bureaucracies and markets provides a vehicle for the analysis of organizations. In particular, I have focused on what this framework might tell us about *innovative organizations*. This has resulted in *Figure 4*.^{24,25}

At the centre of the innovative organization is the *strategic core*. The model recognizes the need for leadership, even (or particularly) in a learning organization. But this is a 'lean' core team of perhaps half a dozen visionaries and strategists, probably with a charismatic leader. The role of this team includes what Snow *et al* (1992) call the 'network architect'. Recognizing that some key competencies can only be obtained by vertical collaboration, and that the source of value creation is their interface with other organizations, these visionaries set about creating and recreating their network. Designing an element of the network and launching the network-building process are essentially entrepreneurial, involving a mixture of creative, financial and political skills. The architect role also involves developing the organization's self-awareness, including its overall social-psychological health. The strategic core will interact with other stakeholders, both directly and through the clans. *The cultural setting of the strategic core is the fief*.

Growing directly from the strategic core are the tentacles of many cross-functional *project teams*. Team members carry out the lead operator role proposed by Snow *et al* (1992), which involves building the network. In addition, some members also need to carry out the

²³I am not claiming that all fiefs are 'win-win' relationships, merely that they present the *opportunity* for 'win-win' relationships.

²⁴Development of the model was influenced by Mintzberg (1979), Reve (1990), Miles and Snow (1992), Snow *et al* (1992), Jarillo (1993) and Baden Fuller and Lorenzoni (1993).

²⁵This model considers the cultural setting of a specific 'node' in a network. The same applies, however, to other nodes in the network, some of which will be suppliers and others customers. In this way, the framework is applicable to the 'supply chain'.

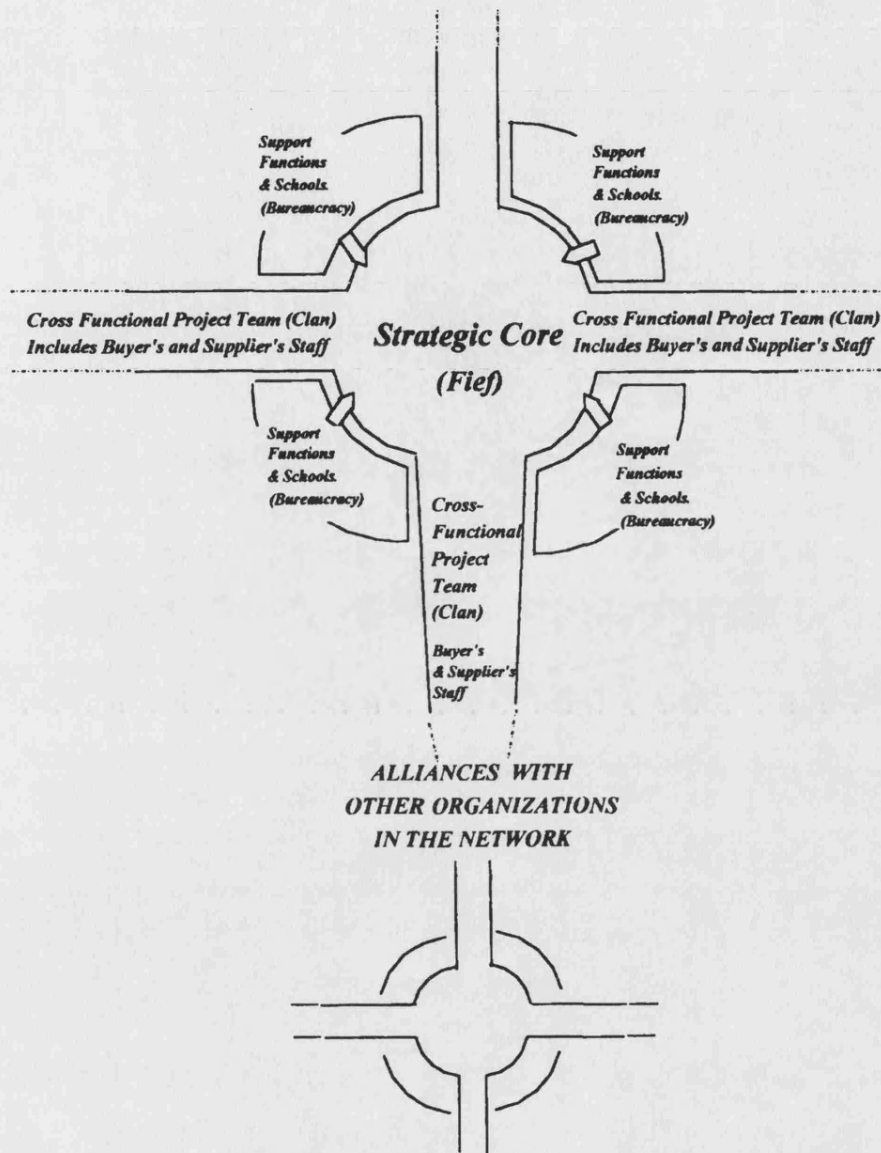


Figure 4 A cultural model of an innovative organization

caretaker role, nurturing a sense of belonging amongst the team. Team members therefore need not only functional/operational skills, but also team working and social-integrative skills. The sense of belonging felt by members is a mixture of social integrative and economic cooperative.

The project team activities reach outside the borders of the organization, searching for interactions with compatible firms. Once network links are formed, the relationship-building process begins. Potential partners may either be nominated by the strategic core or discovered by the project team. *Eventually, the team will include the buyer's and supplier's staff working together as a single, cosmopolitan clan.* Drawing on the 'bisociation' derived from their different backgrounds, in an environment of developing trust, a high level of profitable innovation becomes possible.

Supporting both the fief and its clans are the *technical specialists*. Their roles are important, since they constantly seek out best practice and extend the body of knowledge in the organization's key competencies. They may donate specialists to the clan teams as and when needed. They represent the 'functions as schools' approach suggested by Womack and Jones (1994). Ideally, staff will regularly rotate between project team and functional specialist roles in order to broaden individual development. The support specialists may develop the rules of discipline used in the clans, supporting the caretaker role. *The cultural setting of the specialists is bureaucracy.*

A contribution of this cultural model of an innovative organization is that it recognizes the need for different organizational subcultures in different parts of the organization and of the network. It also allows

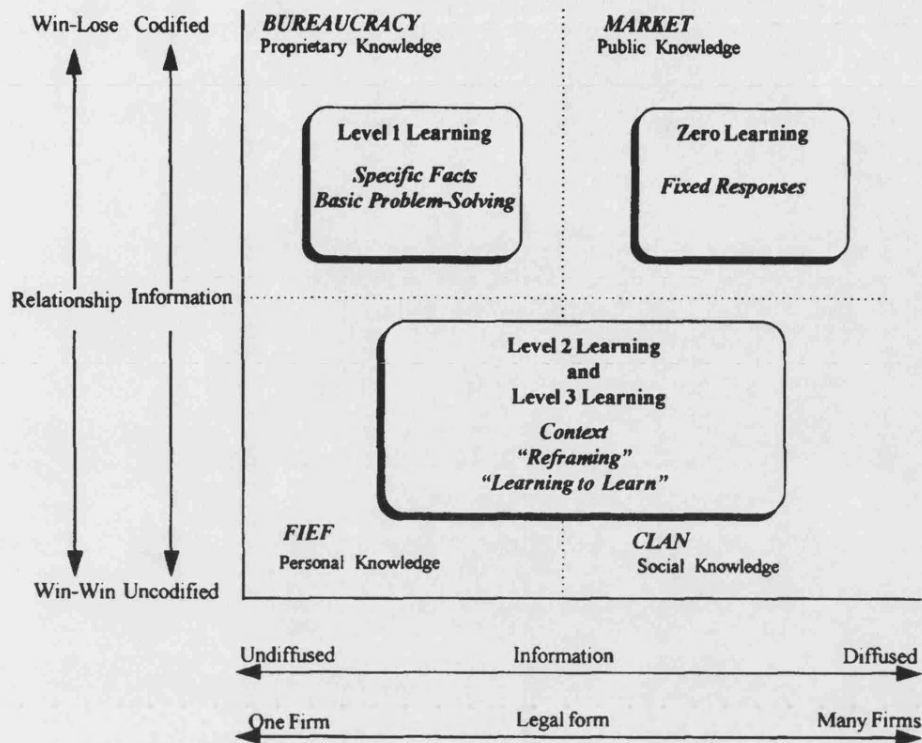


Figure 5 Culture and learning

the development of various research questions regarding the processes that organizations use to form vertical collaborations.

Network learning

Previous sections of this paper have emphasized the strategic importance of facilitating learning not only within the organization but between organizations, and particularly in the 'quasi-firm' where the buyer's and supplier's borders overlap.

Since the framework in Figures 3 and 4 includes some hypotheses regarding the acquisition of information, can it tell us anything about innovative learning within networks? Learning of different types takes place within the different cultural settings as shown in Figure 5. Day-to-day problem-solving can be supported by the bureaucracy, but the transformational learning required for innovation takes place in the fief and its associated clans. Relating Huber's (1991) constructs or organizational learning to the cultural framework reveals that all the organizational groupings and cultural styles have a role to play in organizational learning (Figure 6).

Vital 'hard' information is acquired from the external environment, which becomes Revans' 'programmed' knowledge. Such information is essential in running the business, and unless project-specific, it is processed via the functions/schools. The less codified information is essential to the project teams (clans) and

to the strategic core (fief). This is Revans' 'Q': questioning insight. Out of this type of organizational learning comes new self-awareness within the organization, and hence the motivation for technical and managerial innovation.

Lawson's (1980) model of the creative process, described earlier, can also be viewed from this cultural perspective Figure 7.

The 'first insight' that a business opportunity exists might emerge within the strategic core assisted by information from the support functions. Insight is almost by definition uncodified. During the preparation phase, the support functions will investigate the feasibility of the proposed project, gaining what hard data is available from the environment. During the incubation phase, the strategists/fief will 'kick around' the idea and mull it over, including a consideration of any political aspects. (This stage may be shared with the project team/clan.) The next stages, of illumination and verification, are where additional creativity is needed, and the clan will carry out this role, sending its tentacles into the market, testing both the technical and the 'soft and fuzzy' elements of the idea, involving partner organizations in the network as necessary. Baden-Fuller and Lorenzoni (1993) and Jarillo (1993) have identified firms that have been successful in developing 'strategic networks'. Such firms have encouraged 'learning races' amongst network partners, where financial rewards are given to

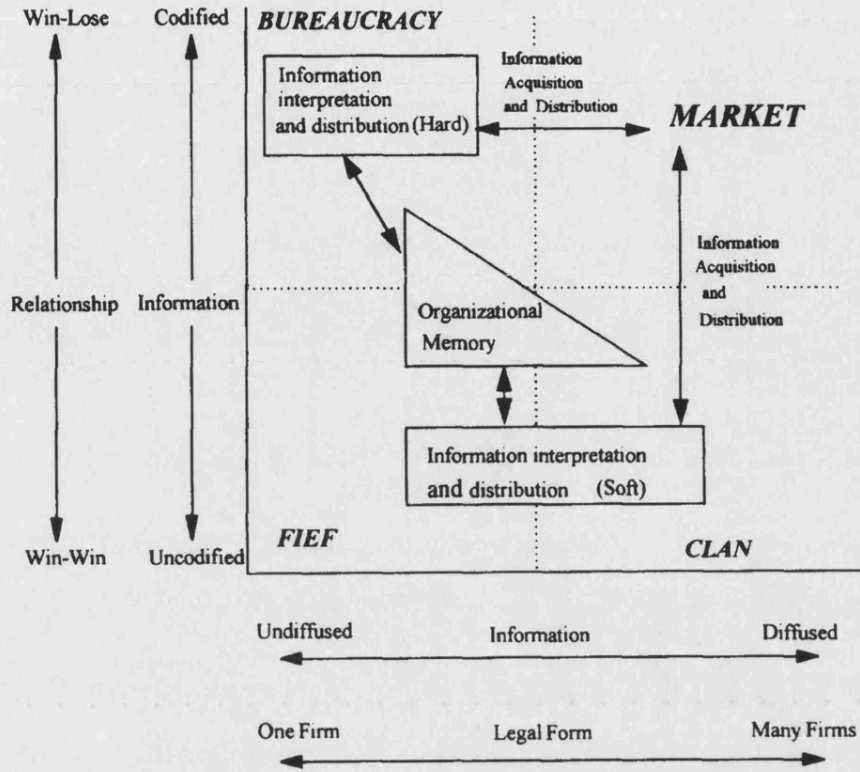


Figure 6 Network learning: a cultural perspective

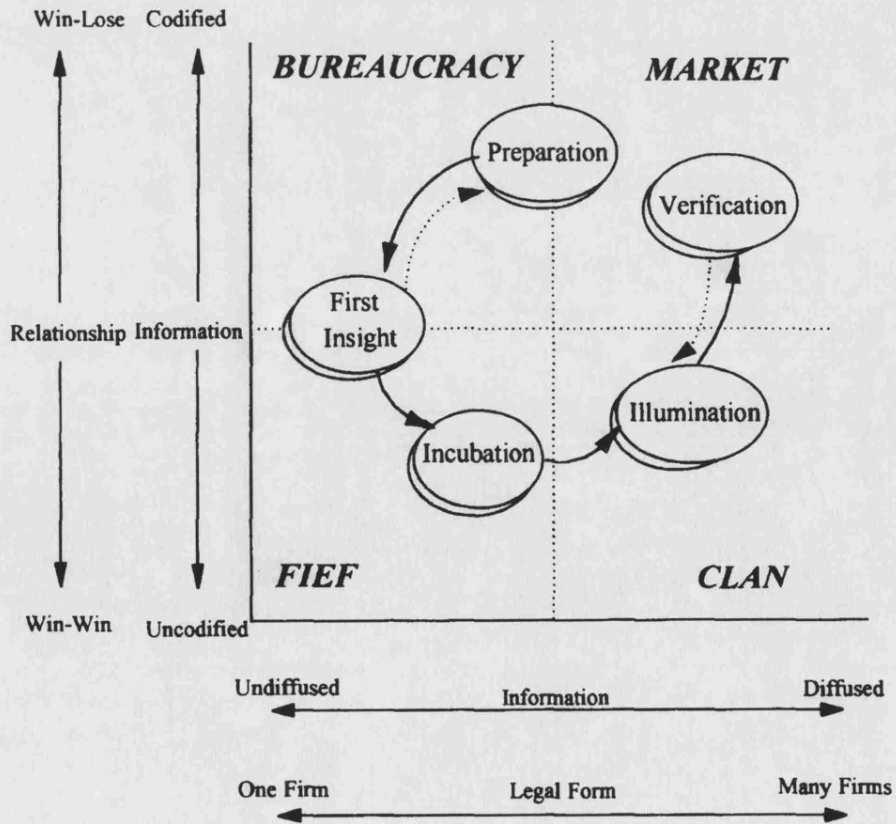


Figure 7 The creative process: a cultural perspective

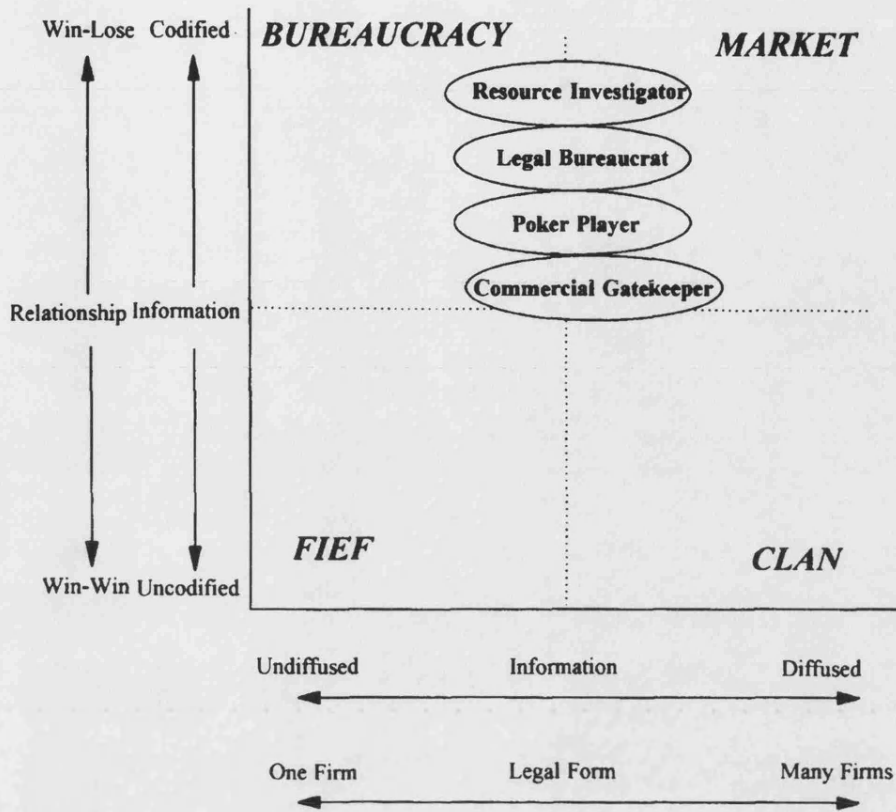


Figure 8 Traditional purchasing roles

those who contribute value-creating ideas to the network.²⁶

Implications for purchasing

The preceding sections have considered issues in the business environment in some detail. Emerging organizational forms have been identified, along with the implications for strategic and operational management. But what are the implications of these changes for purchasing, both as a process within organizations and as a function?²⁷

Traditional purchasing roles

In the more traditional, arm's-length paradigm, purchasing managers and members of their functional departments carried out the following roles.

*Commercial gatekeeper: (informational role).*²⁸ In this role, the purchasing manager controlled how much information was divulged to suppliers. In its most

extreme form, other members of the organization were prevented from having discussions with suppliers unless a buyer was present.

*Resource investigator: (research role).*²⁹ This role involved researching technical and commercial aspects of supply markets.

Legal bureaucrat (contract administration role). This role involved drafting agreements designed to protect the company from sharp practice by suppliers or unforeseen events.

*Poker player: (bargaining role).*³⁰ Keeping information a closely guarded secret, the purchasing manager tried to bluff and bargain towards a 'good' (zero-sum) deal.

The cultural perspective of these roles is shown in Figure 8. It can be seen that all the roles are based at the bureaucracy/market interface, exchanging codified data in a 'win-lose' relationship. The potential for the generation of value, the emergence of innovative ideas, or the development of strategy is therefore low. In this

²⁶Benetton is often quoted as an example of such a strategic network carrying out 'learning races'.

²⁷As explained in relation to the 'cultural model of an innovative organization', the ideas expressed here are focused on one 'node' in a network—or half of a network 'dyad'. However, it is possible that they would apply more widely throughout the network.

²⁸The term 'gatekeeper' is from Allen (1977), although my use of it is significantly different (commercial rather than technical).

²⁹The term 'resource investigator' has been borrowed from Belbin's (1981) work on team roles.

³⁰Poker is a 'zero-sum' game. That is, the 'winner's' gains are exactly the sum of the 'loser's' losses. For this reason, the metaphor is appropriate to a consideration of the buyer-supplier relationship in the traditional, arm's-length paradigm.

Table 2 Impact of 'the new competition' on purchasing

Dimensions	Impact on purchasing
Organization of the firm	Global networks with cores based on flexible, creative, learning organizations, designed to meet the needs of the marketplace
Types of coordination	Breakdown of functional barriers Viewing functional units as interdependent parts
Sector organization	Coordinating the supply value chain for competitive advantage
Patterns of industrial policy	Removing the tension between firms (partnering) Complex inter-firm relationships Redefining relationships with suppliers, customers and competitors

Source: Spekman *et al* (1994)

traditional mode, it becomes a difficult or even impossible for the purchasing function to contribute to competitive advantage.

Emerging purchasing roles

Spekman *et al* (1994) have proposed a new strategic role for purchasing based on their view of the emerging realities of competition. This is shown in Table 2.

Many supply problems 'transcend the purchasing function' under the emergent purchasing paradigm. It becomes necessary to think of purchasing as a process rather than as a function—a process involving staff from throughout the organization. Referring back to the 'innovative organization' model in the previous section, some purchasing 'specialists' will be located within the support functions and 'schools',

whilst others will be located in cross-functional and 'cross-organizational' project teams. Significant supply chain thinking will be necessary within the strategic core.

Under the new paradigm, the traditional roles would be de-emphasized, and new roles would appear. The *commercial gatekeeper* role becomes less necessary because communication is more open and team-based; purchasing provides some guidelines. *Resource investigator* remains a purchasing role, but there is more cross-functional team involvement; purchasing concentrates on the strategic resource issues. The *legal bureaucrat* role will become de-emphasized to allow development of 'goodwill trust' (Sako, 1992). The 'win-lose' *poker player* would be replaced by *negotiation*. In addition, some new roles will emerge, as shown in Figure 9.

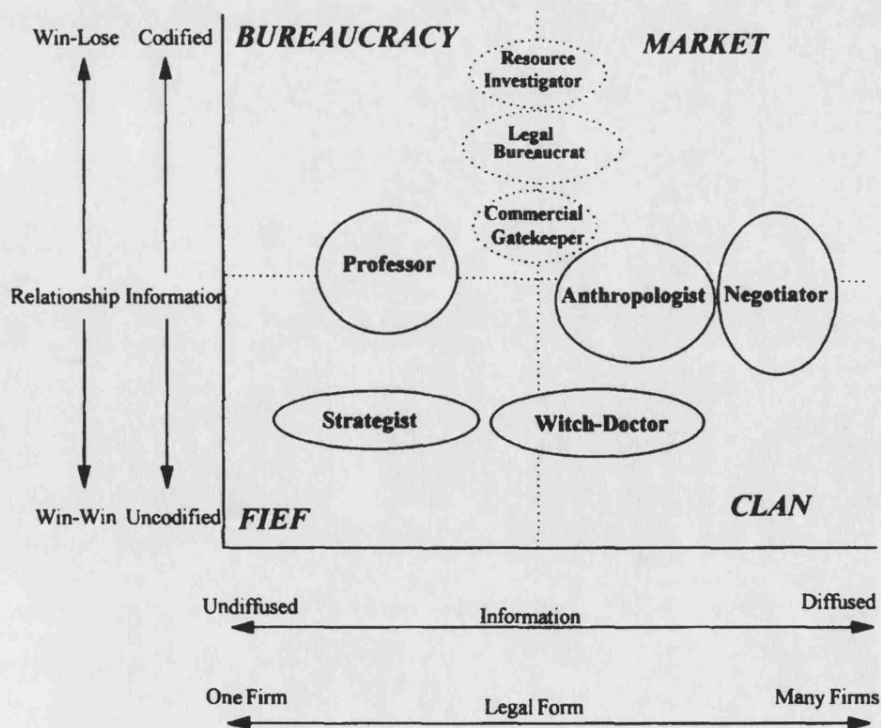


Figure 9 Emerging purchasing roles

Industrial anthropologist. A key role within the strategic purchasing process will be understanding the norms, values, attitudes and beliefs of suppliers in the network and those of potential new suppliers. It will be necessary to make judgements about how these elements of culture will interact in the 'quasi-firm'. The task may be to find 'compatible' cultures, rather than 'similar' cultures.

Witch doctor/priest. The purchasing process will need to extend to managing certain symbolic activities, in order to support emerging relationships. This idea is not as fanciful as it may sound; supplier awards days are an existing example. The role may include a 'pastoral' aspect of reinforcing certain beliefs and values (and perhaps taking some confessions). Spekman et al (1994) see purchasing becoming a 'key player in the process of nurturing and managing internal and external relationships', in which purchasing professionals 'articulate and clarify the firm's vision and mission that is shared with external constituents'.³¹

Professor. In a genuine learning organization, one of the roles of the purchasing manager is 'professor of supply management'. But this should not be interpreted in a pedagogic way. The aim, in conjunction with other members of the managerial team, is to facilitate higher levels of learning within cross-functional teams. Only if such learning is successfully facilitated will the organization maintain its awareness and be prepared for the innovations and transformations that will be necessary.

Strategist. The final 'new purchasing role' is that of strategist—the 'network architect'. Organizations will wish to attempt to design their network at the strategic level.³² The strategic purchasing management role will contribute to decisions regarding:

- (1) to what extent the organization can position itself as a strategic hub or core within certain networks;
- (2) what strategies to use in order to interface with suppliers with strategically important competencies; and
- (3) understanding what the effects might be of changes in one link in the network on the rest of the network (coping with interconnectedness).

Conclusions

This paper has attempted to address a neglected field in the emerging theory of supply management—how

³¹Lamming has recently noted the role of 'blame cultures' in organizations. However, for centuries, the process of dealing with 'blame' in small-scale societies has been dealt with by witch-doctors of various types, who act as interlocutors or go-betweens, in order to facilitate a mutually acceptable solution.

³²The network design process will clearly be less precise and more complex than the task of designing a more 'discrete' organization without a developed network. But as Spekman et al (1994) point out, 'most hierarchical forms are doomed'.

can the evolving relationships needed for 'external resource management' be developed and managed?

In order to explore this question, we have had to travel a considerable distance away from the notion of humans as rational, scientific and economically motivated. 'Soft contracting' refers to the process of reaching agreements, based on trust and mutual understanding. The parties realize that they do not have enough information to make a perfect agreement. They rely, to some extent, on 'gut feel' about each other, built up over a period of close working relationships. The agreement may turn out to be unbalanced in the short term, but they take the 'long view'. A social affiliative clan works together because the people involved like to work with each other and gain some satisfaction from the quality of the work that they produce together. Innovation and creativity are mysterious processes that do not respond predictably to purely rational economic circumstances. Rather, the process of 'condition setting' across organizational boundaries encourages innovation.

It has been demonstrated that the cultural setting of these new relationships is the domain of fiefs and clans rather than the traditional setting of bureaucracies and markets. Within this new cultural setting, a number of new roles have been identified, which will be necessary to create and sustain relationships. The scope of these roles is so wide that it is clear that the purchasing process will become cross-functional and distributed throughout the organization. The management of these roles will be a strategic issue, since it will be the key to competitive advantage for many organizations.³³

In the introduction to this paper, I expressed the view that the development of collaborative relationships has been a challenge for mankind throughout history. Now that we have a greater appreciation of the complexity of these relationships, how optimistic can we be?

It is the miracle of civilized survival that the human cooperative urge reasserts itself so strongly and so repeatedly. There is so much working against it, and yet it keeps on coming back. We like to think of this as the conquest of bestial weaknesses by the powers of intellectual altruism, as if ethics and morality were some kind of modern invention. If this were true, it is doubtful if we would be here today to proclaim it. If we did not carry in us the basic biological urge to cooperate with our fellow men, we would never have survived as a species. If our hunting ancestors had really been ruthless, greedy tyrants loaded with 'original sin', the human success story would have petered out long ago. (Morris, 1969, pp 25–26)

³³In order to research the validity of the framework developed in this paper, it will be necessary to apply an appropriate research methodology. The methodology will be an adaptation of the 'ethnographic' approach used in social anthropology.

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